REDACTED VERSION

FLUOR DANIEL ARCS TEAM

Members: Fluor Daniel, Inc.
I.T. Corporation
PEI Associates, Inc.
Life Systems, Inc.

Program Office:
12790 Merit Drive
Suite 200, LB 169
Dallas, TX 75251
Tel (214) 450-4100
Fax (214) 450-4101

January 10, 1994

FDI/ARCS # 2452

U.S. Environmental Protection Agency
Attn: Walt Helmick (6E-SH)
Work Assignment Manager
1445 Ross Avenue
Suite 1000
Dallas, Texas 75202

CONTRACT NO. 68-W9-0013
REVISED SITE INSPECTION REPORT
DIXIE (TEI) PETRO-CHEMICAL, INC., TXD079836763
LONGVIEW, GREGG COUNTY, TEXAS
SITE INSPECTIONS
WA #25-6JZZ

Dear Mr. Helmick:

Transmitted herewith is the Revised Site Inspection Report for the Dixie (TEI) Petro-Chemical, Inc. site located in Longview, Gregg County, Texas using the new format requested by The Site Assessment Manager.

Should you have any questions concerning this report, please contact one of the undersigned at (214) 450-4100.

Sincerely,

Keith Westberry

Keith Westberry
ARCS Project Hydrologist

Jonathan Stewart

Jonathan Stewart
ARCS Project Manager

KW/JS:kkh

Enclosure

90104608

CONTRACT NO. 68-W9-0013
REVISED SITE INSPECTION REPORT
FOR
DIXIE (TEI) PETRO-CHEMICAL
CERCLIS # TXD079836763
LONGVIEW, GREGG COUNTY, TEXAS
WA # 25-6JZZ

Approved by:	____________________ **EPA Project Manager**	______ **Date**
Approved by:	[signature] **Project Manager**	1/10/94 **Date**
Approved by:	[signature] **Technical Reviewer**	1/10/94 **Date**
Approved by:	Keith Westbury **Task Manager**	01/10/94 **Date**

REVISED SITE INSPECTION REPORT FOR DIXIE (TEI) PETRO-CHEMICAL CERCLIS # TXD079836763 EPA WA # 25-6JZZ

TABLE OF CONTENTS

TABLE OF CONTENTS CONT.

TABLES

FIGURES

ATTACHMENTS

REVISED SITE INSPECTION REPORT FOR DIXIE (TEI) PETRO-CHEMICAL CERCLIS ID# TXD079836763 EPA WA# 25-6JZZ

1.0 INTRODUCTION

Under authority of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), Fluor Daniel, Inc. has been tasked by the U.S. Environmental Protection Agency (EPA) to perform a Site Inspection (SI) on the Dixie (TEI) Petro-Chemical (DTPC) (TXD079836763) site, located in Longview, Gregg County, Texas.

1.1 Site Inspection Objectives

The Site Inspection (SI) is the second investigation stage of the pre-remedial process. Only those sites requiring further action after the SI become Expanded Site Inspection (ESI) candidates.

The SI characterizes the site by data collected from regulatory file reviews, interviews, site reconnaissance inspections, and limited sampling (20 samples or less).

The SI evaluates the site through Hazardous Ranking System (HRS) documentation. It expands upon information obtained during the Preliminary Assessment (PA), including the PA and SI Reports, HRS PRESCORE, site reconnaissance inspections and analytical data.

1.2 Site-Specific Objectives

The primary objectives of this SI are to characterize and locate any possible hazardous substances on the site and to gather the necessary information to complete the HRS PreScore program. Also, determine if any of the chemical tanks on-site leaked into the soil, and if any contaminants have been released off-site via the surface water or soil exposure pathways. The pathways considered to be of concern are the surface water and soil exposure pathways.

1.3 Site Description

DTPC is located at 801 Gum Springs Road, Longview, Gregg County, Texas. This site is located approximately ¼ of a mile south of the intersection of Gum Springs Road and Eastman Road in Longview. The site is approximately four acres in size and is completely secured by a fence. The geographical coordinates of the site are 32°29'20" north latitude and 94°42'30" west longitude (Ref. 1, pg. 1). The site reconnaissance inspection was conducted by Fluor Daniel, Inc. on April 19, 1993 and the site sampling inspection was conducted during the week of May 24, 1993.

1.4 Site Operational History

DTPC presently conducts business under the name of DPC Industries, Inc. which is located south of Longview on Highway 149 in Lakeport, Texas. DTPC began it's operations at 801 Gum Springs Road in 1979 and closed in 1986 (Ref. 1, pg. 1). This property is currently leased to the McConway & Torley, Corp. (MC & T). MC & T is a rail car parts manufacturer. MC & T is managed on-site by their western regional manager, Mr. Earl A. Zapp. There are currently four employees working at MC & T.

DTPC was a commercial repackaging facility of bulk industrial solvents. These solvents were repackaged into 55-gallon, 5-gallon, and 1-gallon containers. These products were then resold to customers. Hazardous waste was generated by spills and line flushes related to repackaging and by decontamination of drum containers. Some spent solvents generated off-site by customers may have also been returned to DTPC for on-site management as hazardous waste (Ref. 5, pp. 1-2).

In 1982, DTPC was permitted as both a RCRA generator and a RCRA transporter. However, in that same year the company applied for a RCRA treatment, storage, and disposal (TSD) facility permit. In 1984, DTPC operated as a TSD. The facility reportedly had an emergency response by the Longview Fire Department in 1982 (Ref. 5). DTPC remained in operation as a TSD until closing in 1986 (Ref. 5). In 1985 an underground storage tank (UST) was removed from the facility. The tank was originally used as the holding tank for waste solvents and waste water produced in the decontamination of drum containers (Ref. 6, pg. 5).

During their seven years of operation, DTPC used 36 USTs (Ref. 1, pg. 3). There is no file information to document the removal of all of the tanks. The 1985 tank removal is the only one documented in Texas Water Commission (TWC) and EPA files. However, during the site reconnaissance inspection, Mr. Wayne Penick, Senior Environmental Specialist, DPC Industries, Inc. noted that all of the USTs had been removed.

1.5 Quality Control Procedures

All previously collected sampling and non-sampling data are addressed in this section. The purpose of the sampling is to identify areas of contaminated soil that may be present on-site and target areas that may have been affected off-site. Table 1 lists the bulk chemicals that were handled on-site.

The samples which were collected during the field work phase of the SI were shipped to Contract Laboratory Program (CLP) laboratories and the drinking water samples collected were shipped to the USEPA Laboratory in Houston, Texas. The CLP laboratories involved for this SI are as follows:

1. Organic......Southwestern Laboratories of Oklahoma.
   Broken Arrow, Oklahoma.
2. Inorganic....American Analytical & Technical Serv.
   Broken Arrow, Oklahoma.

The analytical results were then evaluated with respect to data completeness and contractual compliance by the Houston EPA Environmental Services Division Surveillance Branch. Subsequent to this, the data were validated by Fluor Daniel to assess quality assurance/quality control procedures utilized by the laboratories. Data validation was conducted in accordance with the most current USEPA Data Validation Guidelines and regional instructions. Table 2 presents a summary of sample numbers and locations.

Tables 4 and 5 present the inorganic and organic analytical results, respectively, for all of the samples. Inorganic and organic data quality information is located in Attachments B and C respectively.

All data collection activities have been in accordance with the following documents:

- "Final Project Work Plan - Revision 1 for the Site Inspection Project, EPA Region VI, Volume I" June 9, 1992, Fluor Daniel, Inc.

- "Original Project Field Sampling Quality Assurance Project Plan for the Site Investigations, Region VI, EPA" July 5, 1992, Fluor Daniel, Inc.

- "CLP Users Guide", EPA Region VI, not dated.

- "Original Health and Safety Plan, Site Inspections", June 8, 1992, Fluor Daniel, Inc.

2.0 WASTE/SOURCE CHARACTERIZATION

2.1 General Considerations

Three source areas have been identified. These include the former UST area (north of warehouse), the shallow ground water area (west of warehouse), and the former truck fueling area (south of warehouse) (Figure 2).

The former UST area is where the majority of the bulk chemicals were stored. This area maintains vegetation. However, there are spots where the vegetation is stressed (Ref. 4, pp. 6,8).

There is a ponded area west of the warehouse. The ponded water had an evident oily-like sheen (Ref. 4, pg. 8). Water appears to be seeping from the ground and ponding in this location. The native soils appear to have been replaced with some type of river rock (Attachment A, Photo #9). This area will be discussed as the shallow ground water area. The previous activities at this area are undetermined.

The former truck fueling area is just south of the warehouse. This area contained fuel tanks for the DTPC transport services. An UST was removed from this location (Ref. 7, pg. 1). This area contained a concrete pad with extensive cavitation around the edges (Ref. 4, pg. 10).

2.2 Sample Locations

Table 3 presents sample numbers, locations, and objectives for all samples collected during the SI. Seven waste/source samples were collected (Figure 3):

- Four subsurface (4-6 ft deep) soil samples were collected to characterize the former UST area just north of the warehouse.
- One sediment sample was collected in the shallow ground water area west of the warehouse.
- Two near surface soil samples were collected on opposite sides of the concrete pad south of the warehouse in an attempt to characterize another former UST area.
- A background soil sample (SS-13) was collected East of Gum Springs Road in a vacant grassy area (Figure 3). Sample SD-14 (background sediment sample) was collected upstream of the site in Long Creek.

2.3 Analytical Results

Inorganic

Data quality results achieved by the laboratory were generally acceptable. For soil samples, the initial calibration blank for selenium reported concentrations above the Instrument Detection Limit (IDL) and below the Contract Required Detection Limit (CRDL); continuing calibration blanks for barium, beryllium, chromium, and vanadium reported concentrations above the IDL and below the CRDL. Chromium results for all soil samples were qualified as estimated (J) or (uj) due to ICP serial dilution out of control limits.

Inorganic analytical results indicate the presence of several metals which were detected at levels greater than three times the background concentrations (BBC). Nickel was detected above the BBC in samples SS-09 (19.8 ppm), SS-10 (27.9 ppm), SS-11 (29.6 ppm), SS-12 (12.3 ppm). Chromium was detected above BBC in sample SS-06 (43.6 ppm). Arsenic concentrations were greater than the background concentrations for samples SS-06 (3.6 ppm), SS-07 (3 ppm), SS-09 (3.5 ppm), and SS-12 (2.8 ppm). Barium concentrations were greater than background concentrations for samples SS-06 (118 ppm), SS-09 (80.1 ppm) and SS-10 (44.5 ppm). Chromium concentrations exceeded background concentrations in sample SS-09 (12.5 ppm). Selenium concentrations exceeded background concentrations in samples SS-06 (0.5 ppm), SS-07 (0.52 ppm), SS-09 (80.1 ppm), SS-10 (0.39 ppm), SS-11 (0.56 ppm), and SS-12 (0.5 ppm). Vanadium concentrations exceeded the background concentration in sample SS-06 (31 ppm). Zinc concentrations were above background in samples SS-06 (87.9 ppm), SS-10 (117 ppm), and SS-11 (130 ppm). Sediment sample SD-08 was above the BBC for barium (289 ppm), chromium (67.9 ppm), and nickel (9.4 ppm). Sample SD-08 also contained the following concentrations above background concentrations: arsenic (5.5 ppm), selenium (0.8 ppm), vanadium (60.5 ppm), and zinc (60.8 ppm). Table 4 presents all of the inorganic data for the soil and sediment waste/source characterization samples.

Organic

Quality assurance results achieved by the laboratory were generally acceptable. Several VOA and BNA compounds were out of control limits for percent relative standard deviation (%RSD) or percent difference (%D) calibration criteria. The affected samples were qualified as estimated. There were no gross variations noted in the sample results of the field duplicates.

Sample SS-07 contained a concentration above the BBC for 2-Butanone (17 ppb). No other organic sample contaminants were detected above the BBC or background in sample SS-07. Sample SS-09 contained the following contaminants above the BBC: toluene (17,000 ppb), ethylbenzene (31,000 ppb), xylene (total) (160,000 ppb), and naphthalene (1400 ppb). Tetrachloroethane and 2-Butanone were detected below the BBC but above the background concentrations. Sample SS-11 contained concentrations above the BBC for acetone (12,000 ppb), 2-butanone (13,000 ppb), toluene (200,000 ppb), 1,2-dichloroethane (3,100 ppb), tetrachloroethene (24,000 ppb), ethylbenzene (68,000 ppb), trichloroethene (8400 ppb), total xylene (260,000 ppb), naphthalene (3,800 ppb), 2-methylnaphthalene (6,100 ppb), endosulfan II (7 ppb), and endrin (4.4 ppb). There were no concentrations reported between the BBC and the background concentrations. No other soil or sediment waste/source charicterization samples contained organic contaminant levels above BBC or background. Table 5 presents all of the organic data for the soil samples.

2.4 Summary

The seven samples collected on-site contained either organic or inorganic contaminants. Samples SS-06, SD-08, and SS-09 contained significant amounts of arsenic, barium, chromium, nickel, selenium, vanadium, and zinc. Samples SS-09 and SS-11 contained significant amounts of the following organic compounds: ethylbenzene, toluene, xylene, naphthalene, tetrachloroethane, and 2-butanone. Additionally sample SS-11 also contained 1,2-dichloroethane, trichloroethane, 2-methylnaphthalene, endosulfan II, and endrin.

3.0 GROUND WATER MIGRATION PATHWAY

3.1 Hydrogeology

DTPC is located in the East Texas Embayment Region. The principal source of ground water in Gregg County is from units of the Wilcox Group (Eocene). A small quantity of ground water is provided by Pleistocene and Holocene alluvium. The most extensive surface outcrop in the area is the Queen City Sand (Claiborne Group) (Ref. 8, pp. 3,6).

Quarternary Alluvial sediments in this area occur near the flood plains of the principal streams. These sediments have a maximum thickness of about 60 feet. The constituents of the alluvium are clay, silt, fine sand, and minor amounts of gravel (Ref. 8, pg. 8).

The Queen City Sand outcrops over 90 percent of Gregg, and bordering Upshur County. The weathered soils of the Queen City Sand are composed of gray sand. Local topographic relief ranges from moderate to hilly. The locally stratified Queen City Sand sediments are massive to cross-bedded. These sediments tend to have three components:

A. 80% medium to fine sand
B. 20% silt and clay
C. minor amounts of lignite

The Queen City Sand formation has a maximum thickness of about 500 feet (Ref. 8, pp. 3,10).

The 4 mile radius from the site extends into parts of Harrison County. This area is outcropped partially by the Queen City Sand and partially by the Reklaw Formation (Ref. 10, pp. 1-2). The Reklaw Formation overlies the Carrizo Sand and consists of clay and fine sand with a maximum thickness of about 100 feet, but is not regionally continuous (Ref. 9, pg. 10).

The Wilcox Group, Carrizo Sand, and Queen City Sand constitute the significant water-bearing units in Gregg County. The Wilcox and Carrizo Formations are hydraulically interconnected. They will be referred to as the Carrizo-Wilcox aquifer (Ref. 8, pp. 8-10).

The Carrizo-Wilcox aquifer outcrops between Longview and Kilgore. The aquifer dips toward the northeasterly-trending trough (East Texas Embayment) at about 15 feet per mile. The Carrizo-Wilcox aquifer ranges from about 300 feet above sea level to nearly 500 feet below sea level (900 feet below land surface). The average thickness of this aquifer is approximately 600 feet (Ref. 8, pg. 10).

There are three methods of recharge to the Carrizo-Wilcox aquifer:

1. The infiltration of precipitation on the outcrop areas.
2. The infiltration of runoff in route to a watercourse.
3. The infiltration of water from streams and lakes.

These recharge areas for the Carrizo-Wilcox lie in Gregg and adjacent counties (Ref. 8, pg. 11).

The Queen City Sand is the second most important aquifer in the area. It is defined as an unconfined surface aquifer. The base of this aquifer dips toward the northeasterly-trending trough at a rate approximately equal to that of the Carrizo-Wilcox. The movement of water in the Queen City Sand is toward the larger streams. There is a low hydraulic gradient of 8 feet per mile which causes slow movement of a few hundred feet per year (Ref. 8, pg. 11).

3.2 Targets

Although, the municipal water supply for Longview and the community of Gum Springs is the Sabine River and Lake Cherokee, there are some domestic wells within the four mile radius of the site. Available information indicates that there are five drinking water wells within four miles of the site (Ref 4, pg. 1; Ref. 12, pg. 1; Ref. 16, pp. 1-15). These wells are listed as either domestic or public wells and could be used for drinking water.

3.3 Sample Locations

Fluor Daniel located and sampled two private drinking water wells; the [redacted] and [redacted] residences. The [redacted] well is located approximately 1.02 miles southeast of the site. The [redacted] well is located approximately 1.49 miles northeast of the site (Ref. 12, pg. 1; Ref. 13, pg. 1). There were three drinking water samples (two samples and one duplicate) collected from these two wells. Table 3 shows the sample locations and rationales and Table 1 is a sample information summary table.

3.4 Analytical Results

The drinking water samples were analyzed for target analyte metals and target compound organics.

Inorganic

Data quality results achieved by the laboratory were generally acceptable. For the water samples, continuing calibration blanks for lead, selenium, and vanadium reported concentrations above the IDL and below the CRDL. These affected sample results were qualified non-detect (u) if reported concentrations were above the IDL but less than five times the highest associated blank concentrations.

Sample DW-18 was the background sample selected located at the [redacted] residence. Sample DW-19 was a duplicate of DW-18 and will not be discussed in this text. Sample DW-20 was collected at the [redacted] residence. This sample contained a lead concentration of 5.7 ppb, which was above the BBC. Barium (79 ppb) and zinc (273 ppb) were also detected. Table 4 presents all of the inorganic data for the drinking water samples.

Organic

There were no significant detections of organic compounds in the drinking water samples. Table 5 and Attachment 6 present all of the organic data for the drinking water samples.

3.5 Summary

The Queen City Sand is the aquifer of concern. It is defined as an unconfined, surface aquifer. The base of this aquifer dips toward the northeasterly-trending East Texas Embayment at a rate approximately equal to that of the Carrrizo-Wilcox. There is a low hydraulic gradient of 8 feet per mile which causes slow movement of a few hundred feet per year.

Ground water use within 4 miles of the site, for drinking water, is limited to five drinking water wells. Two of the five wells identified and one was classified as the background sample (DW-18). Sample DW-20 was found to contain lead (5.7 ppb) above the BBC, barium (79 ppb) and zinc (273 ppb) above the background concentrations. There were no significant detections of organcic compounds in these drinking water samples.

The likelihood of a release to the shallow Queen City Sand is great due to the depth of contaminants at the site. However, there are very few targets available to this contamination. The contaminants, in the two Queen City Aquifer wells identified, are not necessarily attributable to the site, due to the distance of the wells from the site.

4.0 SURFACE WATER MIGRATION PATHWAY

4.1 Hydrology

The major surface hydrologic characteristic to the area is the Sabine River. An intermittent stream flows south from the site approximately 1/2 mile and outfalls into Long Creek. Long Creek continues approximately 2 miles before entering Eastman Lake. Eastman Lake outfalls into the Sabine River. The 15-mile target limit distance is reached within the confines of the Sabine River (Figure 4).

Water within the intermittent stream had an oily-like sheen on it. It is unknown if this could have been caused by natural organic processes.

4.2 Targets

No drinking water intakes are within the 15 mile target distance limit. However, surface water from the Sabine River and Lake Cherokee are the public water supplies for Longview and Gum Springs. The Sabine River intake is located upstream and would not be affected by this site. Lake Cherokee is located southeast of the site and is not affected by the Sabine River (Ref. 12, pg. 1).

There are extensive palustrine, lacustrine, and riverine wetlands located along the 15 mile target limit distance (Ref. 15, pp. 1-2). The Sabine River is also classified as a fishery (Ref. 22, pg. 4). The annual precipitation for Gregg County is 48 inches (Ref. 22).

The threatened and endangered species near the site are as follows: (Ref. 11, pg. 1)

1. Neches River Rose Mallow
   Category #2 Federal (Endangered & Threatened)
2. Alligator Snapping Turtle
   Category #2 Federal & State Threatened
3. Wintering/Nesting Area for American Bald Eagles

4.3 Sample Locations

Three off-site near surface (0-6 in. deep) sediment samples were collected to characterize off-site surface water contamination. Table 3 describes the locations of these samples (See Figure 3). Three surface water (0-6 in. deep) samples were collected in locations off-site to further characterize any possible surface water contamination. These included a duplicate and a background.

4.4 Analytical Results

There were three surface water samples (one duplicate) and three sediment samples collected to characterize this pathway. Table 1 is a sample information summary table and Table 3 lists the sample locations and rationales.

A background sediment sample (SD-14) and surface water sample (SW-15) were collected east of the site in Long Creek.

Inorganic

Data quality results achieved by the laboratory were generally acceptable. For the water samples, continuing calibration blanks for lead, selenium, and vanadium reported concentrations above the IDL and below the CRDL. These affected sample results were qualified non-detect (u) if reported concentrations were above the IDL but less than five times the highest associated blank concentrations.

Samples SD-03 and SD-16 each contained contaminants above the BBC. Sample SD-03 was above the BBC for barium (217 ppm), and chromium (103 ppm). Sample SD-16 was above the BBC for arsenic (70.6 ppm), chromium (80.5 ppm), vanadium (167 ppm), and zinc (93.9 ppm). These samples also had significant detections that were above the background concentrations but below the BBC. The samples and associated contaminants are as follows:

<u>SD-03</u> - arsenic (7.5 ppm), lead (91.2 ppm), nickel (5 ppm), selenium (0.73 ppm), vanadium (22.7 ppm), and zinc (58.6 ppm).

<u>SD-16</u> - barium (50.5 ppm), lead (78.1 ppm), nickel (5.6 ppm), and selenium (1.7 ppm).

Sample SW-02 was a duplicate sample of SW-01, therefore only SW-01 sample results will be discussed in this section. Sample SW-01 contained two contaminants at levels above background concentrations but below the BBC; barium (206 ppb) and nickel (15.8 ppb). The following analytes were detected above the BBC: arsenic (4.1 ppb), chromium (60 ppb), lead (34.4 ppb), vanadium (40.5 ppb), and zinc (138 ppb). Table 4 presents the inorganic data for the sediment and surface water samples.

Organic

Quality assurance results achieved by the laboratory were generally acceptable. Several VOA and BNA compounds were out of control limits for percent relative standard deviation (%RSD) or percent difference (%D) calibration criteria. The affected samples were qualified as estimated. There were no gross variations noted in the sample results of the field duplicates.

Sample SD-03 contained concentrations above the BBC for endrin (5.4 ppb). Sample SD-16 contained concentrations above the BBC for dieldrin (11 ppb) and endrin (17 ppb). This sample also contained the following compounds at a concentration greater than background but less than BBC: acenaphthene (70,000 ppb), and carbozole (4,200 ppb). Compound concentrations reported for SD-14 (background) were high, therefore contamination observed in sample SD-16 will not be attributed to the site. Table 5 presents the organic data for the sediment samples.

There were no significant detections of organic compounds in the surface water samples. There were some detections of volatile compounds in the surface water samples, however, these results were below the detection limit. Table 5 and Attachment 6 present the organic data for the surface water samples.

4.5 Summary

The migration of contaminants from the sources was evident by the contaminants in sample SD-03. Sample SD-03 contained arsenic, barium, chromium, nickel, lead, selenium, vanadium, and zinc. Lead was not detected in any of the source characterization samples and therefore will be attributed to present site activities (the extensive storage of rail car parts). Sample SD-03 was collected in the intermittent drainage ditch south of the site. Sample SD-16 was collected from Long Creek at the confluence with the intermittent stream. Contamination was observed in sample SD-16 and the background sample (SD-14). Therefore the contamination observed in sample SD-16 could not be attributed to the site.

5.0 SOIL EXPOSURE PATHWAY

5.1 Characteristics

The site is currently active and is being used as a rail car parts manufacturing facility. The site is approximately four acres (Ref. 2, pg. 14). Vegetation in some areas is very sparse. Some of these areas had been cleared for the storage of rail car parts. At other areas, the vegetation appeared stressed but could not be attributed to present on-site activities. Access to the site is restricted on all sides by a fence.

5.2 Targets

There have been no terrestrial sensitive environments documented on the site. The population within two miles of the site is as follows: (Ref. 13, pg. 1; Ref 17, pg. 3; Ref 19, pg. 1)

Target Distance Population Counts
0 - 1/4 mile radius = 152 persons
1/4 - 1/2 mile radius = 67 persons
1/2 - 1 mile radius = 558 persons
1 - 2 mile radius = 19,978 persons
Total (within 2 miles) = 20,755 persons

There are four workers for MC&T currently working on site (Ref. 4, pg.2). There are eight persons residing within 200 feet of the site (Figure 1). There is one school located within 1/2 mile of the site and five schools located from 1/2 to 2 miles from the site. There are also seven daycare centers within 2 miles of the site (Ref. 12, pg. 1; Ref 23, pp. 2-4).

5.3 Sample Locations

Three near surface (0-6 inches) soil/sediment samples were collected to characterize the site soil exposure pathway. Sample SS-04 was collected at Lot 41 on the trailer park adjacent to the site. Sample SS-05 was collected at the trailer park on Lot 38. Sample SS-13 was the background soil sample collected in a grassy area East of Gum Springs Road. Figure 3 shows the sample locations and Table 3 lists the sample rationales.

5.4 Analytical Results

Data quality results achieved by the laboratory were generally acceptable. For soil samples, the initial calibration blank for selenium reported concentrations above the IDL and below the CRDL; continuing calibration blanks for barium, beryllium, chromium, and vanadium reported concentrations above the IDL and below the CRDL. These affected sample results were qualified non-detect (u) if reported concentrations were above the IDL but less than five times the highest associated blank concentrations. Chromium results for all soil samples were qualified as estimated (J) or (uj) due to ICP serial dilution out of control limits. All soil sample results were compared to the background sample (SS-13) results.

Inorganic

A zinc concentration of 48.4 ppm (SS-04) was the only detection greater than background for samples SS-04 and SS-05. Table 4 presents all of the inorganic data for the soil samples.

Organic

Sample SS-04 contained a concentration above the BBC for gamma-BHC (Lindane) (3.2 ppb). There were no other volatile, semi-volatile, or pesticide compounds detected above the BBC or background in samples SS-04, SS-05, or SS-06. Table 5 presents all of the organic data for the soil samples.

5.5 Summary

One soil sample collected at the trailer park, adjacent to the site, contained zinc (48.4 ppm) above the background sample concentration. There are three residences within 200 feet of a source characterization sample which contained chromium above BBC and arsenic, barium, selenium, vanadium, and zinc above background concentrations.

6.0 AIR MIGRATION PATHWAY

6.1 General Considerations

The site is currently active and is being used as a rail car parts manufacturing facility. The site is approximately four acres in size (Ref. 2, pg. 14). Vegetation in some areas is very sparse. Some of these areas had been cleared for the storage of rail car parts. At other areas, the vegetation appeared stressed but could not be attributed to present on-site activities. No releases of hazardous substances or reports of adverse health effects have been documented.

6.2 Targets

There have been no terrestrial sensitive environments documented on the site. However, within a four mile radius there are endangered and threatened species as noted in section 4.2 (Ref. 11, pg. 1). The population within four miles of the site is as follows: (Ref. 13, pg. 1; Ref. 17, pg. 3; Ref. 19, pg. 1)

Target Distance Population Counts

0 - 1/4 mile radius = 152 persons
1/4 - 1/2 mile radius = 67 persons
1/2 - 1 mile radius = 558 persons
1 - 2 mile radius = 19,978 persons
2 - 3 mile radius = 15,141 persons
3 - 4 mile radius = 9,548 persons
Total = 45,444 persons

There are four workers for MC&T currently on site (Ref. 4, pg. 2). There are eight persons residing within 200 feet of the site (Figure 1). There is one school located within 1/2 mile of the site and five schools located from 1/2 to 2 miles from the site. There are also seven daycare centers within 2 miles of the site (Ref. 12, pg. 1, Ref. 23, pp. 2-4).

6.3 Air Monitoring

No air samples were collected as part of this SI. However, a portable air quality monitor (HNu) was carried on-site during the SI. There were no measurements above background at any location except those samples taken at a depth of 4-6 feet. This measurement was made in the hole and it dissipated before reaching the breathing zone. The contaminants present at this location are not readily available to the air due to their depth. No formal air monitoring program was conducted.

6.4 Summary

The site is located in a medium populated area. The nearest residence is approximately 180 feet south of the site and approximately 45,444 persons live within 4 miles. There was no indication of a release to the air pathway.

7.0 SUMMARY AND CONCLUSIONS

The Dixie (TEI) Petro-Chemical, Inc. SI attempted to gather data necessary to evaluate the site as a candidate for the NPL. Waste and environmental samples were collected and analyzed to characterize the types and substances deposited at the site and potential migration pathways. In addition, information was collected to confirm target populations and environments potentially threatened by the site.

DTPC was a commercial repackaging facility of bulk industrial solvents. These solvents were repackaged into 55-gallon, 5-gallon, and 1-gallon containers. These products were then resold to customers. Hazardous waste was generated by spills and line flushes related to repackaging and by decontamination of drum containers. Some spent solvents generated off-site by customers may have also been returned to DTPC for on-site management as hazardous waste.

Available information indicates that there are five water wells within a four mile radius of the site. These wells are listed as either domestic or public wells and could be used for drinking water. Two of these wells were evaluated during this SI. The well at the [redacted] residence was sampled for the background ground water sample and was found to have lead and zinc in the water. The sample results for the [redacted] well showed levels of selenium above the BBC. No observed release to ground water will be considered due to the distance of the wells from the site.

Drinking water within a four mile radius of the site is supplied by the Sabine River and Lake Cherokee. There are no drinking water intakes along the fifteen mile target distance limit. The Sabine River intake is upstream of the PPE from the site. The Lake Cherokee is not located along the fifteen mile target distance limit.

There is metals contamination in the sediment samples collected on and off site. Chromium was detected in an on-site sediment sample and in the drainage path 1/2 of a mile from the site above the BBC. It is undetermined what on-site activities could have caused chromium contamination. Arsenic was detected above the BBC at the PPE to Long Creek. However, it was not detected above BBC in any on-site samples. There is organic compound contamination in the sediment samples collected in Long Creek (SD-14 & SD-16). The majority of these contaminants are also found in the background sample (SD-14). Therefore they can not be attributed to the site. There are extensive wetlands in the area. The Sabine River is also designated as a major fishery.

There are currently four workers on the site. The threat to off-site population is minimal due to the properly maintained fence around the site and the small number of drinking water wells within four miles of the site. There is observed contamination within 200 feet of the three residences adjacent to the site. Extensive organic chemical contamination was observed on-site. Five on-site subsurface soil samples were collected in the former UST area. Three of the five samples contained elevated levels of various organic compounds. These on-site samples also contained chromium, and nickel at levels greater than BBC.

The air pathway is being evaluated on a potential to release basis. There are no data to document a release to the air. The site is slightly vegetated in areas and well vegetated in areas. There are extensive wetlands nearby. The population within four miles of the site is approximately 45,444.

4.0 REFERENCES

1. Wayne Penick, DPC Industries, Inc., Letter to Keith Westberry, Fluor Daniel, Inc., Concerning Dixie (TEI) Petro-Chemical, April 12, 1993.

2. "Dixie (TEI) Petro-Chemical Lease Agreement", August 3, 1979.

3. Perrin, John K., Dixie (TEI) Petro-Chemical, "Closure of Hazardous Waste Management Facilities Report", prepared for the Texas Water Commission, March 31, 1987.

4. "Dixie (TEI) Petro-Chemical, Site Inspection", Logbook of Field Activities, Fluor Daniel, Inc., April 19, 1983.

5. Luper, C. Noel, "Texas Department of Health RCRA Inspection Report", March 16, 1984.

6. Henderson, Robert J., Resource Engineering, Inc., "Closure of Underground Hazardous Waste Storage Tank", presented to the Texas Department of Health, Austin, Texas, July 26, 1985.

7. Wayne Penick, DPC Industries, Inc., Letter to Keith Westberry, Fluor Daniel, Inc., Concerning Dixie (TEI) Petro-Chemical, April 20, 1993.

8. Broom, Matthew E. & Myers, B.N., U.S. Geological Survey, Report No. 27, "Ground Water Resources of Gregg and Upshur Counties, Texas", October 1969.

9. Broom, Matthew E. & Myers, B.N., U.S. Geological Survey, Report No. 27, "Ground Water Resources of Harrison County Texas", August 1966.

10. "Geologic Atlas of Texas, Tyler Sheet", Bureau of Economic Geology, The University of Texas at Austin, March 1965.

11. Shannon Breslin, Texas Parks and Wildlife - Texas Natural Heritage Program, Record of Communication with Keith Westberry, Fluor Daniel, Inc., Concerning Endangered Species/Sensitive Environments, April 15, 1993.

12. U.S.Geological Survey, 7.5 Minute Topographic Maps, Lakeport Quadrangle, Texas, Provisional Edition, 1983.

13. Mike McGuire, Eastman Villa Mobile Home Park, Record of Communication with Keith Westberry, Fluor Daniel, Inc., Concerning the number of residents in the adjacent trailer park, September 21, 1993.

REFERENCES (CONT.)

14. Dave Terry, Texas Water Commission, Record of Communication with Keith Westberry, Fluor Daniel, Inc., Concerning Well Head Protection Areas, August 3, 1993.

15. U.S. Department of the Interior, Fish and Wildlife Service, "Classification of Wetlands and Deepwater Habitats of the U.S.:,Lakeport Quadrangle, February, 1980.

16. Texas Water Development Board, Ground Water Data System, "Water Level Publication Report, County-Gregg", "Records of Wells, Springs, and Test Holes", June, 1993.

17. "County and City Data Book", U.S. Bureau of the Census, 1988.

18. Keith Westberry, Fluor Daniel, Inc., "Drinking Water Well Distance Calculations", August, 1993.

19. Keith Westberry, Fluor Daniel, Inc., "Target Distance Population Counts", August, 1993.

20. Printout of the GEMS Software Package for the Dixie (TEI) Petro-Chemical site, 1993.

21. "Community Information and Data Book", Longview Chamber of Commerce, 1993.

22. "Soil Survey of Upshur and Gregg Counties, Texas", U.S. Department of Agriculture, May, 1993.

23. Southwestern Bell Telephone Company, "Greater Longview, December 1992-93 White and Yellow Pages.

TABLES

TABLE 1

LIST OF BULK CHEMICALS HANDLED ON-SITE

TABLE 1
LIST OF BULK CHEMICALS HANDLED ON-SITE

PRODUCT	TANK CAPACITY	EST. ANNUAL THRU PUT
Acetone	8000 gal.	800,000 lbs.
Anti-Freeze	8000 gal.	325,500 lbs.
Glycol Ether DB	1,000 gal.	45,000 lbs.
Glycol Ether EB	4,000 gal.	260,000 lbs.
Diethanolamine 85%	2,000 gal.	40,000 lbs.
Ethyl Acetate	4,000 gal.	185,000 lbs.
Ethyl Alcohol	4,000 gal.	264,000 lbs.
Ethylene Glycol	2,000 gal.	74,400 lbs.
Heavy Aromatic Naptha	8,000 gal.	584,000 lbs.
Isopropyl Alcohol	8,000 gal.	975,000 lbs.
Lacquer Dilutent	4,000 gal.	78,000 lbs.
Methanol	30,000 gal.	6,600,000 lbs.
Methyl Ethyl Ketone	8,000 gal.	540,000 lbs.
Methyl Isobutyl Ketone	2,000 gal.	130,000 lbs.
Methylene Chloride	4,000 gal.	135,000 lbs.
Mineral Seal Oil	2,000 gal.	150,000 lbs.
Mineral Sprits	8,000 gal.	795,000 lbs.
Naphthol Spirits	2,000 gal.	105,000 lbs.
N. Butyl Acetate	2,000 gal.	45,000 lbs.
N. Butyl Alcohol	8,000 gal.	160,000 lbs.
N. Propyl Acetate	2,000 gal.	150,000 lbs.
N. Propyl Alcohol	4,000 gal.	80,000 lbs.
Perchlorethylene	2,000 gal.	110,000 lbs.
Solvent 100	2,000 gal.	146,000 lbs.
Solvent 150	2,000 gal.	58,000 lbs.
140 Solvent	2,000 gal.	52,800 lbs,
Toluol	30,000 gal.	1,000,000 lbs.
1-1-1 Trichlorethane	4,000 gal.	550,000 lbs.
Triethylene Glycol	8,000 gal.	750,000 lbs.
VM&P	8,000 gal.	760,000 lbs.
Xylene	8,000 gal.	875,000 lbs.
Caustic Soda 50%	8,000 gal.	600,000 lbs.

TABLE 2

SAMPLING INFORMATION SUMMARY TABLE

TABLE 2
SAMPLE INFORMATION SUMMARY TABLE
Dixie (TEI) Petro–Chemical
Sampling Event – May 24, 1993

Sample Number	CLP Number IN./ORG.	Depth	Matrix	Location
SW01	MFAQ06/FZ908	N.A.	Surface Water	Drainage Ditch South of Site
SW02	MFAQ07/FZ909	N.A.	Surface Water	Duplicate of SW01
SD03	MFAQ08/FZ910	(0–6 inches)	Sediment	Drainage Ditch South of Site
SS04	MFAQ01/FZ903	(0–6 inches)	Soil	Trailer Park – Lot 41
SS05	MFAQ02/FZ904	(0–6 inches)	Soil	Trailer Park – Lot 38
SS06	MFAQ09/FZ911	(0–6 inches)	Soil	UST area South of Warehouse
SS07	MFAQ10/FZ912	(4–6 feet)	Soil	UST area South of Warehouse
SD08	MFAQ11/FZ913	(0–6 inches)	Sediment	Ponded Water (West)
SS09	MFAQ12/FZ914	(4–6 feet)	Soil	UST area North of Warehouse
SS10	MFAQ14/FZ916	(0–3 feet)	Soil	UST area North of Warehouse
SS11	MFAQ15/FZ917	(0–3 feet)	Soil	UST area North of Warehouse
SS12	MFAQ16/FZ918	(4–6 feet)	Soil	UST area North of Warehouse
SS13	MFAQ00/FZ902	(0–6 inches)	Soil	BCKG–E. of Gum Springs Rd.
SD14	MFAQ03/FZ905	(0–6 inches)	Sediment	BCKG–Long Creek
SW15	MFAQ04/FZ906	N.A.	Surface Water	BCKG–Long Creek
SD16	MFAQ05/FZ907	(0–6 inches)	Sediment	Long Creek & Intermittent
FB17	MFAQ17/FZ919	N.A.	Field Blank	Field Blank
DW18	N.A.	N.A.	Drinking Water	(b) (6) [redacted] Residence
DW19	N.A.	N.A.	Drinking Water	Duplicate of DW18
DW20	N.A.	N.A.	Drinking Water	(b) (6) [redacted] Residence
RB21	MFAQ13/FZ915	N.A.	Rinsate Blank	Rinsate Blank

TABLE 3

SAMPLING LOCATION AND RATIONALE

TABLE 3
SAMPLING LOCATIONS AND RATIONALE

SAMPLE NUMBER	***SAMPLE LOCATION AND RATIONALE***
1	Low concentration water sample: Collected surface water sample from drainage ditch south of the site. **Rationale:** To document a potential to release to surface water.
2	Duplicate of Sample # 1.
3	Low concentration sediment sample: Collected sediment sample from drainage ditch south of the site. **Rationale:** To characterize potential contamination off-site.
4	Low concentration soil sample: Collected soil sample from a residence in the adjacent trailer park (south of site). **Rationale:** To characterize potential observed contamination at an off-site residence (Soil Exposure Pathway).
5	Low concentration soil sample: Collected soil sample from a residence in the adjacent trailer park (south of the site). **Rationale:** To characterize potential observed contamination at an off-site residence (Soil Exposure Pathway).
6	Low concentration soil sample: Collected soil sample from former underground storage tank area located south of the warehouse. Sample was taken near the concrete pad and drainage ditch that flows off-site. **Rationale:** To characterize potential contamination on-site. (source characterization)
7	Low concentration soil sample: Collected soil sample from underground fuel tank area located south of the warehouse. Sample was taken (4-6 ft. depth) on the north side of concrete pad in area where extensive cavitation has occurred.

TABLE 3 (CONT.)
SAMPLING LOCATIONS AND RATIONALE

SAMPLE NUMBER	***SAMPLE LOCATION AND RATIONALE***
	<u>Rationale:</u> To characterize potential contamination on-site. (source characterization)
8	Low concentration sediment sample: Collected sediment sample from ponded water area next to concrete pad. (West side of site)
	<u>Rationale:</u> To characterize potential contamination on-site.
9	Low concentration soil sample: Collected soil sample (4-6 ft. depth) from the former UST area north of warehouse. Sample was taken on western end of this area.
	<u>Rationale:</u> To characterize potential contamination on-site. (source characterization)
10	Low concentration soil sample: Collected soil sample (0-3 ft. depth) from the former UST area north of warehouse. Sample was taken along northern side of area that has stressed vegetation. The sample depth was originally 4-6 feet, due to a significant reading on the Hnu the sample was taken at this depth.
	<u>Rationale:</u> To characterize potential contamination on-site. (source characterization)
11	Duplicate of Sample # 11.
12	Low concentration soil sample: Collected soil sample (4-6 ft. depth) from former UST area north of the warehouse. Sample was taken from eastern side of area. (North of warehouse ramp)
	<u>Rationale:</u> To characterize potential contamination across the former UST area north of warehouse. (source characterization)
13	Low concentration soil sample: Collected soil sample from grassy area east of Gum Springs Road.
	<u>Rationale:</u> To determine background soil concentrations.

TABLE 3 (CONT.)
SAMPLING LOCATIONS AND RATIONALE

SAMPLE NUMBER	*SAMPLE LOCATION AND RATIONALE*
14	Low concentration sediment sample: Collected sediment sample from Long Creek northeast of site. **Rationale:** To determine background sediment concentrations.
15	Low concentration water sample: Collected surface water from Long Creek northeast of site. **Rationale:** To determine background surface water concentrations.
16	Low concentration sediment sample: Collected sediment sample at the confluence of Long Creek (ppe) and the intermittent stream. **Rationale:** To determine off-site sediment contamination.
17	Trip Blank.
18	Low concentration drinking water sample: Collected drinking water sample from the [redacted] residence. Sample was taken approximately 1.02 miles southeast of the site. **Rationale:** To characterize possible off-site ground water contamination.
19	Duplicate of sample # 18.
20	Low concentration drinking water sample: Collected drinking water sample from the [redacted] residence. Sample was taken approximately 1.49 miles northeast of the site. **Rationale:** To determine off-site background ground water concentrations.
21	Rinsate

TABLE 4
INORGANIC ANALYTICAL RESULTS

TABLE 4
SUMMARY OF INORGANIC ANALYTICAL RESULTS
Dixie (TEI) Petro–Chemical
May 24–25, 1993

Station Location	Compound or Element	Concentration (mg/kg)	Qualifier	CLP Sample Number	Comments
	SURFACE SOIL BACKGROUND SAMPLE				
SS13	Arsenic	1.8	J	MFAQ00	Background
SS13	Barium	43.8	B	MFAQ00	Background
SS13	Chromium	11.3	J	MFAQ00	Background
SS13	Lead	67.6		MFAQ00	Background
SS13	Nickel	3.9	B	MFAQ00	Background
SS13	Selenium	0.34	B	MFAQ00	Background
SS13	Vanadium	17.6		MFAQ00	Background
SS13	Zinc	48.0		MFAQ00	Background
	BACKGROUND BENCHMARK CONCENTRATIONS/SOIL				
SS13	Arsenic	5.4		MFAQ00	3 X Background
SS13	Barium	131.4		MFAQ00	3 X Background
SS13	Chromium	33.9		MFAQ00	3 X Background
SS13	Lead	202.8		MFAQ00	3 X Background
SS13	Nickel	11.7		MFAQ00	3 X Background
SS13	Selenium	1.02		MFAQ00	3 X Background
SS13	Vanadium	52.8		MFAQ00	3 X Background
SS13	Zinc	144.0		MFAQ00	3 X Background
	SOIL SAMPLE RESULTS				
SS04	Arsenic	1.1	J	MFAQ01	Surface Soil
SS04	Barium	21	J	MFAQ01	Surface Soil
SS04	Chromium	7.7	J	MFAQ01	Surface Soil
SS04	Lead	8.9		MFAQ01	Surface Soil
SS04	Nickel	2.7	B	MFAQ01	Surface Soil
SS04	Selenium	0.24	U	MFAQ01	Surface Soil
SS04	Vanadium	13.4		MFAQ01	Surface Soil
SS04	Zinc	48.4		MFAQ01	Surface Soil
SS05	Arsenic	0.44	J	MFAQ02	Surface Soil
SS05	Barium	21.3	B	MFAQ02	Surface Soil
SS05	Chromium	5.4	J	MFAQ02	Surface Soil
SS05	Lead	5.8		MFAQ02	Surface Soil
SS05	Nickel	2.6	U	MFAQ02	Surface Soil
SS05	Selenium	0.35	J	MFAQ02	Surface Soil
SS05	Vanadium	5.9	B	MFAQ02	Surface Soil
SS05	Zinc	43.4		MFAQ02	Surface Soil

Station Location	Compound or Element	Concentration (mg/kg)	Qualifier	CLP Sample Number	Comments
	SEDIMENT BACKGROUND RESULTS				
SD14	Arsenic	4.2	J	MFAQ03	Background Sediment
SD14	Barium	35.4	B	MFAQ03	Background Sediment
SD14	Chromium	15	J	MFAQ03	Background Sediment
SD14	Lead	48.5		MFAQ03	Background Sediment
SD14	Nickel	3	U	MFAQ03	Background Sediment
SD14	Selenium	0.65	B	MFAQ03	Background Sediment
SD14	Vanadium	21.1		MFAQ03	Background Sediment
SD14	Zinc	25.8		MFAQ03	Background Sediment
	BACKGROUND BENCHMARK CONCENTRATIONS/SEDIMENT				
SD14	Arsenic	12.6		MFAQ03	3 X Background
SD14	Barium	106.2		MFAQ03	3 X Background
SD14	Chromium	45.0		MFAQ03	3 X Background
SD14	Lead	145.5		MFAQ03	3 X Background
SD14	Nickel	9.0		MFAQ03	3 X Background
SD14	Selenium	2.0		MFAQ03	3 X Background
SD14	Vanadium	63.3		MFAQ03	3 X Background
SD14	Zinc	77.4		MFAQ03	3 X Background
	SEDIMENT SAMPLE RESULTS				
SD03	Arsenic	7.5	J	MFAQ08	Sediment
SD03	Barium	217 *		MFAQ08	Sediment
SD03	Chromium	103 *	J	MFAQ08	Sediment
SD03	Lead	91.2		MFAQ08	Sediment
SD03	Nickel	5	B	MFAQ08	Sediment
SD03	Selenium	0.73	J	MFAQ08	Sediment
SD03	Vanadium	22.7		MFAQ08	Sediment
SD03	Zinc	58.6		MFAQ08	Sediment
SD08	Arsenic	5.5	J	MFAQ11	Sediment
SD08	Barium	289 *		MFAQ11	Sediment
SD08	Chromium	67.9 *	J	MFAQ11	Sediment
SD08	Lead	15.4		MFAQ11	Sediment
SD08	Nickel	9.4 *	B	MFAQ11	Sediment
SD08	Selenium	0.8	B	MFAQ11	Sediment
SD08	Vanadium	60.5		MFAQ11	Sediment
SD08	Zinc	60.8		MFAQ11	Sediment
SD16	Arsenic	70.6 *	J	MFAQ05	Sediment
SD16	Barium	50.5		MFAQ05	Sediment
SD16	Chromium	80.5 *	J	MFAQ05	Sediment
SD16	Lead	78.1		MFAQ05	Sediment
SD16	Nickel	5.6	B	MFAQ05	Sediment
SD16	Selenium	1.7		MFAQ05	Sediment
SD16	Vanadium	167 *		MFAQ05	Sediment
SD16	Zinc	93.9 *		MFAQ05	Sediment

Station Location	Compound or Element	Concentration (mg/kg)	Qualifier	CLP Sample Number	Comments
SS06	Arsenic	3.6	J	MFAQ09	Surface Soil
SS06	Barium	118		MFAQ09	Surface Soil
SS06	Chromium	43.6 *	J	MFAQ09	Surface Soil
SS06	Lead	16.5		MFAQ09	Surface Soil
SS06	Nickel	7	B	MFAQ09	Surface Soil
SS06	Selenium	0.5	B	MFAQ09	Surface Soil
SS06	Vanadium	31		MFAQ09	Surface Soil
SS06	Zinc	87.9		MFAQ09	Surface Soil
SS07	Arsenic	3	J	MFAQ10	Sub-Surface Soil
SS07	Barium	6.9	B	MFAQ10	Sub-Surface Soil
SS07	Chromium	5.7	J	MFAQ10	Sub-Surface Soil
SS07	Lead	3.9		MFAQ10	Sub-Surface Soil
SS07	Nickel	2.6	U	MFAQ10	Sub-Surface Soil
SS07	Selenium	0.52	B	MFAQ10	Sub-Surface Soil
SS07	Vanadium	8.9	B	MFAQ10	Sub-Surface Soil
SS07	Zinc	2.3	B	MFAQ10	Sub-Surface Soil
SS09	Arsenic	3.5	J	MFAQ12	Sub-Surface Soil
SS09	Barium	80.1		MFAQ12	Sub-Surface Soil
SS09	Chromium	12.5	J	MFAQ12	Sub-Surface Soil
SS09	Lead	9.2		MFAQ12	Sub-Surface Soil
SS09	Nickel	19.8 *		MFAQ12	Sub-Surface Soil
SS09	Selenium	0.73	B	MFAQ12	Sub-Surface Soil
SS09	Vanadium	21.3		MFAQ12	Sub-Surface Soil
SS09	Zinc	11.5		MFAQ12	Sub-Surface Soil
SS10	Arsenic	0.93	J	MFAQ14	Sub-Surface Soil
SS10	Barium	44.5	B	MFAQ14	Sub-Surface Soil
SS10	Chromium	6.5	J	MFAQ14	Sub-Surface Soil
SS10	Lead	7.4		MFAQ14	Sub-Surface Soil
SS10	Nickel	27.9 *		MFAQ14	Sub-Surface Soil
SS10	Selenium	0.39	B	MFAQ14	Sub-Surface Soil
SS10	Vanadium	12.5		MFAQ14	Sub-Surface Soil
SS10	Zinc	117		MFAQ14	Sub-Surface Soil
SS11	Arsenic	1.2	J	MFAQ15	Sub-Surface Soil
SS11	Barium	37.7	B	MFAQ15	Sub-Surface Soil
SS11	Chromium	5.7	J	MFAQ15	Sub-Surface Soil
SS11	Lead	7.9		MFAQ15	Sub-Surface Soil
SS11	Nickel	29.6 *		MFAQ15	Sub-Surface Soil
SS11	Selenium	0.56	B	MFAQ15	Sub-Surface Soil
SS11	Vanadium	12.3		MFAQ15	Sub-Surface Soil
SS11	Zinc	130		MFAQ15	Sub-Surface Soil
SS12	Arsenic	2.8	J	MFAQ16	Sub-Surface Soil
SS12	Barium	3.6	B	MFAQ16	Sub-Surface Soil
SS12	Chromium	4.8	J	MFAQ16	Sub-Surface Soil
SS12	Lead	2.9		MFAQ16	Sub-Surface Soil
SS12	Nickel	12.3 *		MFAQ16	Sub-Surface Soil
SS12	Selenium	0.5	B	MFAQ16	Sub-Surface Soil
SS12	Vanadium	10.5	B	MFAQ16	Sub-Surface Soil
SS12	Zinc	2	B	MFAQ16	Sub-Surface Soil

Station Location	Compound or Element	Concentration (ug/kg)	Qualifier	CLP Sample Number	Comments
	SURFACE WATER BACKGROUND RESULTS				
SW15	Arsenic	1	UJ	MFAQ04	Background Surface Water
SW15	Barium	101	B	MFAQ04	Background Surface Water
SW15	Chromium	5	U	MFAQ04	Background Surface Water
SW15	Lead	3.5	J	MFAQ04	Background Surface Water
SW15	Nickel	11	U	MFAQ04	Background Surface Water
SW15	Selenium	2.5	B	MFAQ04	Background Surface Water
SW15	Vanadium	4	U	MFAQ04	Background Surface Water
SW15	Zinc	8.9	B	MFAQ04	Background Surface Water
	BACKGROUND BENCHMARK CONCENTRATIONS/SURFACE WATER				
SW15	Arsenic	3		MFAQ04	3X Background
SW15	Barium	303		MFAQ04	3X Background
SW15	Chromium	15		MFAQ04	3X Background
SW15	Lead	10.5		MFAQ04	3X Background
SW15	Nickel	33		MFAQ04	3X Background
SW15	Selenium	7.5		MFAQ04	3X Background
SW15	Vanadium	12		MFAQ04	3X Background
SW15	Zinc	26.7		MFAQ04	3X Background
	SURFACE WATER SAMPLE RESULTS				
SW01	Arsenic	4.1 *	B	MFAQ06	SURFACE WATER
SW01	Barium	206		MFAQ06	SURFACE WATER
SW01	Chromium	60 *		MFAQ06	SURFACE WATER
SW01	Lead	34.4 *	J	MFAQ06	SURFACE WATER
SW01	Nickel	15.8	B	MFAQ06	SURFACE WATER
SW01	Selenium	1.5	B	MFAQ06	SURFACE WATER
SW01	Vanadium	40.5 *	B	MFAQ06	SURFACE WATER
SW01	Zinc	138 *		MFAQ06	SURFACE WATER
SW02	Arsenic	3.7 *	B	MFAQ07	SURFACE WATER
SW02	Barium	186	B	MFAQ07	SURFACE WATER
SW02	Chromium	50.2 *		MFAQ07	SURFACE WATER
SW02	Lead	29.7 *	J	MFAQ07	SURFACE WATER
SW02	Nickel	18.1	B	MFAQ07	SURFACE WATER
SW02	Selenium	1.7	B	MFAQ07	SURFACE WATER
SW02	Vanadium	34.8 *	B	MFAQ07	SURFACE WATER
SW02	Zinc	124 *		MFAQ07	SURFACE WATER

Station Location	Compound or Element	Concentration (ug/kg)	Qualifier	CLP Sample Number	Comments
	DRINKING WATER BACKGROUND RESULTS				
DW20	Arsenic	5.8	U	N.A.	Background Drinking Water
DW20	Barium	79		N.A.	Background Drinking Water
DW20	Chromium	10	U	N.A.	Background Drinking Water
DW20	Lead	5.7	*	N.A.	Background Drinking Water
DW20	Nickel	20	U	N.A.	Background Drinking Water
DW20	Selenium	2.9	U	N.A.	Background Drinking Water
DW20	Vanadium	30	U	N.A.	Background Drinking Water
DW20	Zinc	273		N.A.	Background Drinking Water
	BACKGROUND BENCHMARK CONCENTRATIONS/DRINKING WATER				
DW20	Arsenic	5.8	U	N.A.	3X Background
DW20	Barium	237		N.A.	3X Background
DW20	Chromium	10	U	N.A.	3X Background
DW20	Lead	17.1		N.A.	3X Background
DW20	Nickel	20	U	N.A.	3X Background
DW20	Selenium	3.3	U	N.A.	3X Background
DW20	Vanadium	30	U	N.A.	3X Background
DW20	Zinc	819		N.A.	3X Background
	DRINKING WATER SAMPLE RESULTS				
DW18	Arsenic	5.8	U	N.A.	[redacted]esidence
DW18	Barium	27		N.A.	[redacted]esidence
DW18	Chromium	10	U	N.A.	[redacted]esidence
DW18	Lead	3.3	U	N.A.	[redacted]esidence
DW18	Nickel	20	U	N.A.	[redacted]esidence
DW18	Selenium	5.8		N.A.	[redacted]esidence
DW18	Vanadium	30	U	N.A.	[redacted]esidence
DW18	Zinc	99		N.A.	[redacted]esidence
DW19	Arsenic	5.8	U	N.A.	Duplicate of DW-18
DW19	Barium	27		N.A.	Duplicate of DW-18
DW19	Chromium	10	U	N.A.	Duplicate of DW-18
DW19	Lead	3.3	U	N.A.	Duplicate of DW-18
DW19	Nickel	20	U	N.A.	Duplicate of DW-18
DW19	Selenium	2.9	U	N.A.	Duplicate of DW-18
DW19	Vanadium	30	U	N.A.	Duplicate of DW-18
DW19	Zinc	108		N.A.	Duplicate of DW-18

B – Analyte was detected above the Instrument Detection Limit but below the Contract Required Detection Limit.
J – The associated value is an estimated quantity.
U – The material was analyzed for but was not detected above the level of the associated value.
UJ – The material was analyzed for but was not detected. The associated value is an estimate and may be inaccurate.
* – Analyte is greater than three times background concentration or greater than quantitation limit.

TABLE 5

ORGANIC ANALYTICAL RESULTS

TABLE 5
SUMMARY OF ORGANIC AND PESTICIDE COMPOUND RESULTS, SURFACE SOIL AND SEDIMENT SAMPLES
Dixie (TEI) Petro-Chemical
May 24-25, 1993

Station Location:	SS13		SS13		SS04		SS05		SS06		SS07		SS09		SS10		SS11		SS12		SD14		SD14		SD03		SD08		SD16	
CLP Sample Number:	FZ902		FZ902		FZ903		FZ904		FZ911		FZ912		FZ914		FZ916		FZ917		FZ918		FZ905		FZ905		FZ910		FZ913		FZ907	
Comments:	Background		Benchmark Concentration		Tr. Park Lot 41		Tr. Park Lot 38		UST Area S. of W'House		UST Area S. of W'House		UST Area N. of W'House		UST Area N. of W'House		Duplicate of SS10		UST Area N. of W'House		Background		Benchmark Concentrations		S. Drainage Ditch		Ponded Water Area		PPE Intermittent & Long Creek	
Analyte	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q
VOA																														
Acetone	12	J	36		12	UJ	19	B	31	B	33	B	7000	BJ	30000*	B	12000*	B	36*	B	43	B	129		17	B	34	B	10	BJ
2-Butanone		U	10			U		U		U	17*		5100	J	16000	B	13000*	B	9	J		U	10			U	11		11	
Toluene	2	U	10		2	BJ	4	J	21	B	3	BJ	17000*	B	110000*	B	200000*	J	7	BJ	4	BJ	10		2	BJ	3	BJ	2	BJ
Methylene Chloride	5	BJ	15		7	BJ	11	BJ	8	J	12	UJ	1700	U	28000	UJ	1300	UJ	12	BJ	7	BJ	10		5	BJ	7	BJ	5	BJ
1,2-Dichloroethene (Total)	12	J	36		2	J	12	UJ	13	UJ	12	UJ	7700	U	28000	UJ	3100*		12	UJ	13	UJ	13		6	J	11	UJ	13	UJ
Tetrachloroethene	12	J	36		12	UJ	12	UJ	3	J	12	UJ	2100	J	10000	J	24000*		12	UJ	13	UJ	13		12	UJ	11	UJ	13	UJ
Ethylbenzene		U	10			U		U		U	12	UJ	31000*		58000*	J	68000*	J	12	UJ		U	10			U	11	UJ	13	UJ
Xylene (Total)	12	J	36		12	UJ	12	UJ	7	J	12	UJ	160000*	J	410000*	J	260000*	J	2	J	13	UJ	13		12	UJ	11	UJ	13	UJ
1,1,1-Dichloroethane		U	10			U		U		U	12	UJ	7700	UJ	28000	UJ	1200	J	12	UJ		U	10			U	11	UJ	13	UJ
Trichloroethene	12	J	36		2	J	12	UJ	3	J	12	UJ	7700	UJ	28000	UJ	8400*	J	12	UJ	13	UJ	13		12	UJ	11	UJ	13	UJ
1,2-Dichloropropane		U	10			U		U		U	12	UJ	7700	UJ	28000	UJ	420	J	12	UJ		U	10			U	11	UJ	13	UJ
Acid/Base Neutral																														
Acenaphthene	440	U	440		430	U	390	U	420	U	390	U	81	J	1900	U	2200	U	410	U	32000	J	96000		53	J	360	U	70000	J
Fluorene	440	U	440		430	U	390	U	420	U	390	U	120	J	280	J	610	J	410	U	30000	J	90000		56	J	360	U	6600	J
Phenanthrene	45	J	440		430	U	390	U	420	U	390	U	420	J	700	J	2000	J	48	J	98000	J	294000		110	J	43	J	23000	J
Fluoranthene	180	J	540		92	J	390	U	90	J	390	U	290	J	1900	U	2200	U	410	U	57000	J	171000		140	J	110	J	23000	J
Pyrene	230	J	690		77	J	390	U	84	J	390	U	100	J	1900	U	450	J	410		37000	J	111000		170	J	100	J	15000	J
Chrysene	290	J	870		56	J	390	U	56	J	390	U	74	J	1900	U	2200	U	410	U	7700	J	23100		49	J	74	J	4100	J
Butylbenzylphthalate	35	J	440		430	U	390	U		U	390	U		U		U		U		U	13000	U	13000			U		U	4200	J
Benzo (b) Fluoranthene	620		1860		80	J	390	U	110	J	390	U	120	J	1900	U	2200	U	410	U	5100	J	13000		62	J	83	J	4300	J
Benzo (a) Pyrene	280	J	840		430	U	390	U	93	J	390	U	420	U	1900	U	2200	U	410	U	3100	J	13000		49	J	72	J	2900	J
Anthracene	440	U	440		430	U	390	U	12	J	390	U	420	U	1900	U	2200	U	410	U	11000	J	13000		400	U	360	U	2600	J
Carbozole	440	U	440		430	U	390	U	420	U	390	U	420	U	1900	U	2200	U	410	U	2400	J	13000		400	U	51	J	4200	J
Benzo (a) Anthracene	190	J	570		430	U	390	U	420	U	390	U	88	J	1900	U	2200	U	410	U	9500	J	13000		400	U	69	J	6000	J
Benzo (k) Fluoranthene	270	J	810		430	U	390	U	420	U	390	U	420	U	1900	U	2200	U	410	U	2900	J	13000		400	U	61	J	1400	J
Naphthalene	440	U	440		430	U	390	U	420	U	390	U	1400*		2200*		3800*		100	J	41000	J	123000		400	U	360	U	600	J
2-Methylnaphthalene	440	U	440		430	U	390	U	420	U	390	U	310	J	4000*		6100*		160	J	16000	J	48000		400	U	360	U	500	J
Dibenzofuran	440	U	440		430	U	390	U	420	U	390	U	74	J	1900	U	2200	U	410	U	22000	J	66000		400	U	360	U	4000	J
Pesticide																														
Dieldrin	4.4	U	4.4		4.3	U	3.9	U	4.2	U	3.9	U	4.2	U	3.8	U		U	4.1	U	4.4	U	4.4		4	U		U	11*	J
Gamma-BHC (Lindane)	2.3	U	2.3		3.2*		2	U	2.2	U	2	U	2.2	U	2	U	1.7	J	2.1	U	2.3	U	2.3		2	U	1.9	U	2.2	U
Gamma-Chlordane	2.3	U	2.3			U	2	U	2.2	U	2	U	2.2	U	2	U		U	2.1	U	2.3	U	2.3			U		U		U
Endosulfan II	4.4	U	4.4		4.3	U	3.9	U	4.2	U	3.9	U	4.2	U	3.8	U	7*	J	4.1	U	4.4	U	4.4			U	1.9	U		U
Endrin	4.4	U	4.4		4.3	U	3.9	U	4.2	U	2	U	4.2	U	3.8	U	4.4*	J	4.1	U	4.4	U	4.4		5.4*	J	1.9	U	17*	J

TABLE 5
SUMMARY OF ORGANIC AND PESTICIDE COMPOUND RESULTS, SURFACE & DRINKING WATER SAMPLES
Dixie (TEI) Petro-Chemical
May 24-25, 1993

Station Location:	SW15		SW15		SW01		SW02		DW20		DW20		DW18		DW19	
CLP Sample Number:	FZ906		FZ906		FZ908		FZ909		N.A.		N.A.		N.A.		N.A.	
Comments:	Background		Benchmark Concentration		S. Drainage Ditch		Duplicate of SW01		Background		Benchmark Concentration		Hewes Residence		Duplicate of DW18	
Analyte	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q	(ug/kg)	Q
VOA																
Acetone	3	BJ	10		6	BJ	4	BJ	5	U	5		5	U	5	U
2-Butanone	2	J	10		10	U	10	U	5	U	5		5	U	5	U
Toluene	10	U	10		10	U	10	U	5	U	5		5	U	5	U
Methylene Chloride	3	J	10		10	U	10	U	5	U	5		5	U	5	U
1,2-Dichloroethene (Total)	10	U	10		4	J	4	J	2	U	2		2	U	2	U
Acid/Base Neutral																
* There were no significant semi-volatile compound detections for these samples.																
Pesticide																
* There were no pesticide compound detections in these samples.																

J - The associated value is an estimated quantity.
U - The material was analyzed for but was not detected above the level of the assciated value.
* - Analyte is greater than the Background Benchmark Concentration (i.e., quantitation limit or 3x the background concentration).
B - Analyte was detected above the IDL but below the CRDL.

FIGURES

FIGURE 1

SITE LOCATION MAP

U.S.G.S. 7.5 MIN. TOPOGRAPHIC MAP
LAKEPORT. QUADRANGLE

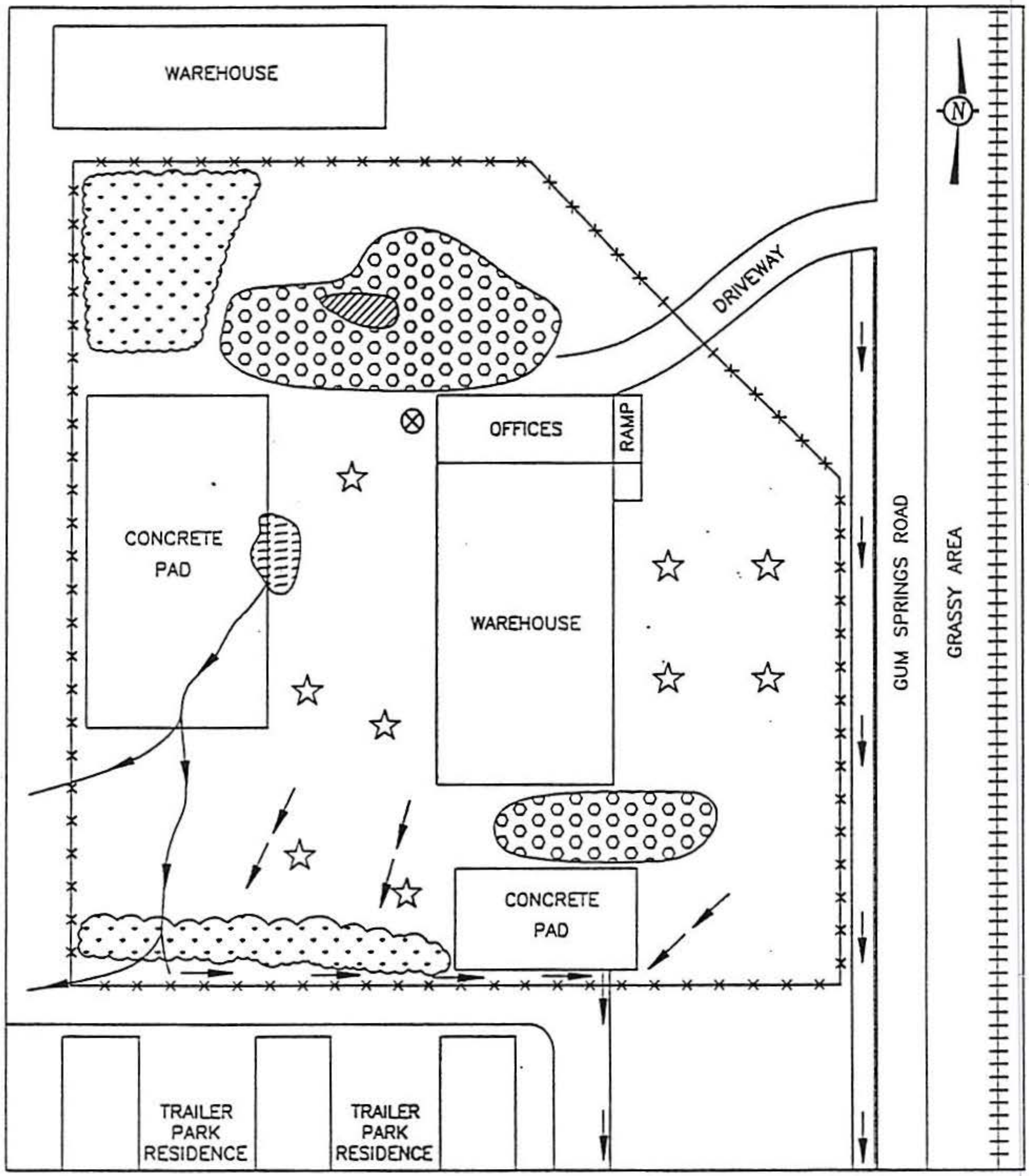
FLUOR DANIEL

FIGURE 1
SITE LOCATION MAP
DIXIE (TEI) PETRO-CHEM
LONGVIEW, TEXAS

CAD FILE No. LOC-MAP

FIGURE 2

SITE SKETCH



LEGEND:

- STRUCTURE
- ROAD
- RAILROAD
- SITE BOUNDARY
- DRAINAGE PATHWAY
- SEPTIC TANK
- INDICATES EXTENSIVE RAILCAR PARTS STORAGE AREA
- POND WATER
- FORMER UST AREA
- AREA OF EXTENSIVE VEGATATION
- AREA OF STRESSED VEGATATION

NOTE TO SCALE

FLUOR DANIEL

FIGURE 2
SITE SKETCH
DIXIE (TEI) PETRO-CHEM
LONGVIEW, TEXAS

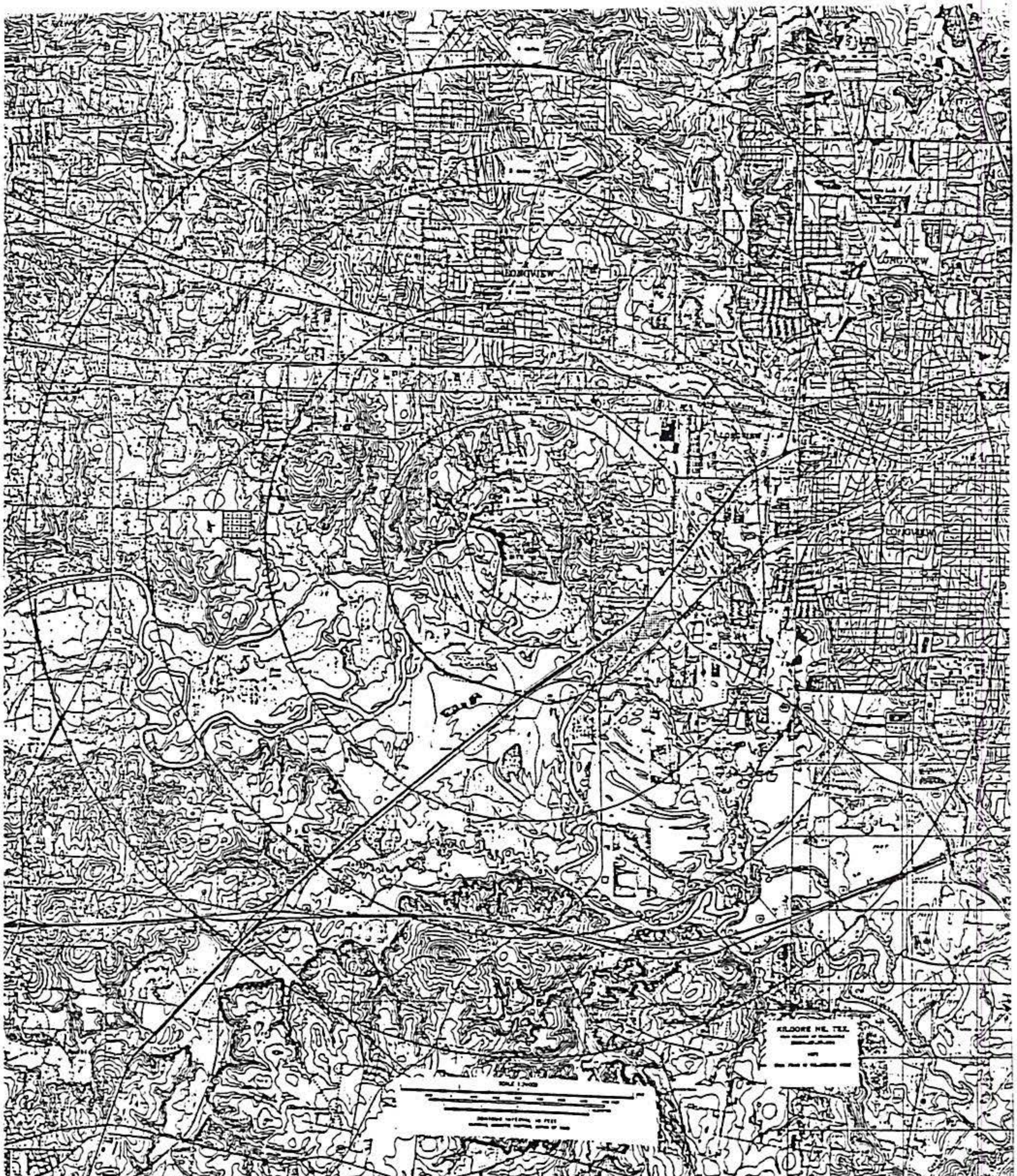
CAD FILE No. FIG-2

FIGURE 3

SAMPLING LOCATION MAP

FIGURE 4

FOUR MILE RADIUS MAP



U.S.G.S. 7.5 MIN. TOPOGRAPHIC MAP
LAKEPORT, QUADRANGLE

FLUOR DANIEL

FIGURE 4
4-MILE RADIUS MAP
DIXIE (TEI) PETRO-CHEM
LONGVIEW, TEXAS

CAD FILE No. FIG-4

ATTACHMENTS

ATTACHMENT A

SITE (SAMPLING EVENT) PHOTOGRAPHS

Photo No.

1

Site Name:
Dixie (TEI)
Petro–Chemical
Location:
Longview, Texas
Project # WA #25–6JZZ

Photographer/Witness KW Keith Westberry/George Farmer GF
Date 5/24/93 Time A.M. Direction North
Description View of background soil sample location (SS–13), taken east of Gum Springs Road.

Photo No.

2

Photographer/Witness KW Keith Westberry/George Farmer GF
Date 5/24/93 Time A.M. Direction North
Description View of Sample SS–05 sample location/ sample taken 25' east of the trail on Lot 38 in trailer park south of site.

Photo No.

3

Site Name:
Dixie (TEI)
Petro-Chemical

Location:
Longview, Texas

Project # WA #25-6JZZ

Photographer/Witness KW Keith Westberry/George Farmer GF

Date 5/24/93 Time A.M. Direction North

Description View of Sample SS-04 location/taken approximately 5' east of Lot 41 trailer park south of the site.

Photo No.

4

Photographer/Witness KW Keith Westberry/George Farmer GF

Date 5/24/93 Time A.M. Direction West

Description View of sample location SW-01, SW-02, & SD-03/taken in intermittent stream that receives runoff from the site/south of site.

Photo No.

5

Site Name:
Dixie (TEI)
Petro–Chemical
Location:
Longview, Texas
Project # WA #25–6JZZ

Photographer/Witness KW Keith Westberry/George Farmer GF
Date 5/24/93 Time A.M. Direction West
Description View of sample locations SD–14 & SW–15/taken in Long Creek northeast of the site/background sediment and surface water locations.

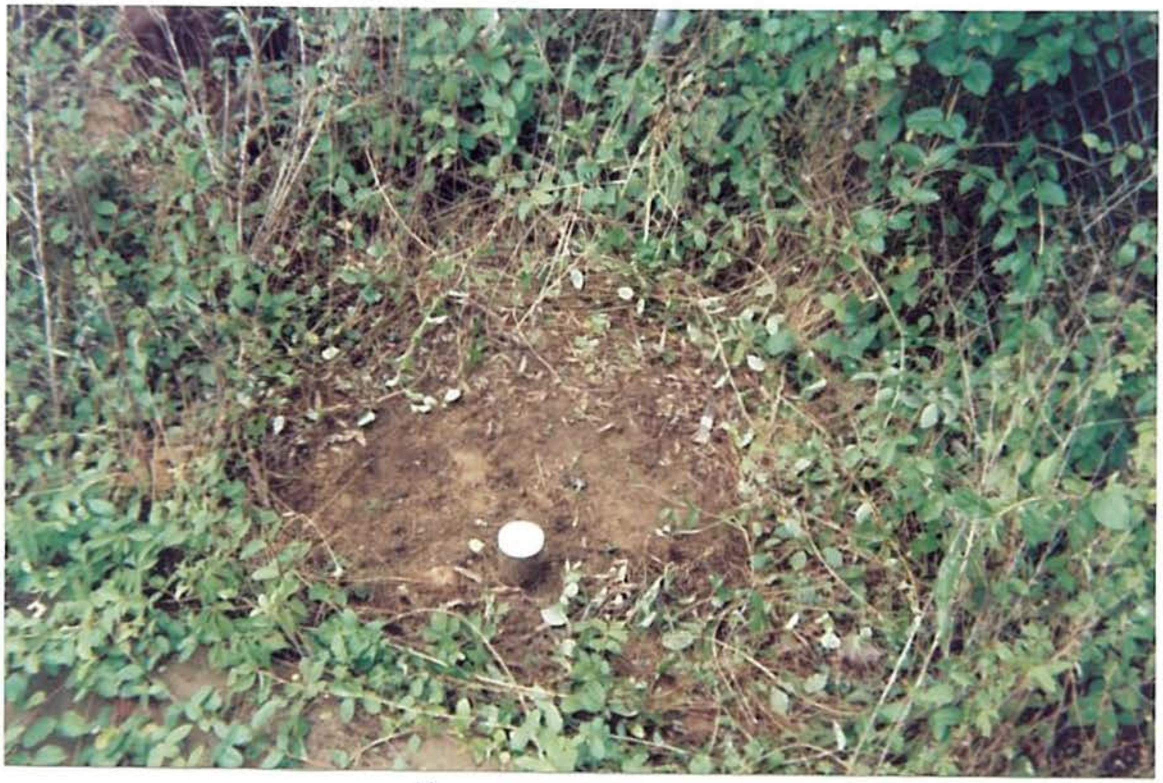
Photo No.

6

Photographer/Witness KW Keith Westberry/George Farmer GF
Date 5/24/93 Time A.M. Direction East
Description View of sample location SD–16/taken at confluence of intermittent stream and Long Creek.

Photo No.

7



Site Name:
Dixie (TEI)
Petro–Chemical

Location:
Longview, Texas

Project # WA #25–6JZZ

Photographer/Witness KW Keith Westberry/George Farmer GF

Date 5/24/93 Time P.M. Direction South

Description View of sample location SS–06/taken next to concrete drainage pad and just east of off–site outfall.

Photo No.

8

Photographer/Witness KW Keith Westberry/George Farmer GF

Date 5/24/93 Time P.M. Direction West

Description View of sample location SS–07/taken between former UST area and the south end of the warehouse.

Photo No.

9

Site Name:
Dixie (TEI)
Petro–Chemical

Location:
Longview, Texas

Project # WA #25–6JZZ

Photographer/Witness KW Keith Westberry/George Farmer GF

Date 5/25/93 Time A.M. Direction West

Description View of sample location SD–08/taken in shallow groundwater area west of the site/observe oily sheen on water and extensive gravel.

Photo No.

10

Photographer/Witness KW Keith Westberry/George Farmer GF

Date 5/25/93 Time A.M. Direction West

Description View of sample location SS–09/taken in former UST area north of the warehouse.

Photo No.

11

Site Name:
Dixie (TEI)
Petro–Chemical
Location:
Longview, Texas
Project # WA #25–6JZZ

Photographer/Witness KW Keith Westberry/George Farmer GF
Date 5/25/93 Time A.M. Direction West
Description View of sample locations SS–10 & SS–11/taken in the former UST area north of the warehouse.

Photo No.

12

Photographer/Witness KW Keith Westberry/George Farmer GF
Date 5/25/93 Time P.M. Direction East
Description View of sample location SS–12/taken in former UST area north of warehouse.

Photo No.

13

Site Name:
Dixie (TEI)
Petro–Chemical
Location:
Longview, Texas
Project # WA #25–6JZZ

Photographer/Witness KW Keith Westberry/George Farmer GF
Date 5/25/93 Time P.M. Direction East
Description View of drinking water sample locations DW–18 & DW–19/taken from the (b) (6) [redacted] residence well

Photo No.

No Photo Available

Page 7
Of 7

Photographer/Witness
Date Time Direction
Description

ATTACHMENT B

INORGANIC DATA QUALITY ASSURANCE REVIEW AND RESULTS

INORGANIC
DATA QUALITY ASSURANCE REVIEW

Site Name:	Dixie Petro Chem
Site Code:	
Case #:	20054
Laboratory	Silver Valley Labs Kellogg, ID 83837
Soil Samples:	MFAQ - 00, 01, 02, 03, 05, 08, 09, 10, 11, 12, 14, 15, & 16
Water Samples:	MFAQ - 04, 06, 07, 13, & 17

The data package consisted of 13 soil samples and five water samples analyzed for TCL metals and cyanide.

1. Analytical Parameters: All samples analyzed using low concentration methods.

2. Holding Times: All holding time criteria were met.

3. Calibrations: Calibration results were within control limits

4. Blanks - For soil samples: initial calibration blank for selenium and sodium reported concentrations above the IDL and below the CRDL; continuing calibration blanks for barium, beryllium, calcium, chromium, copper, iron, magnesium, manganese, potassium, sodium, silver, vanadium reported concentrations above the IDL and below the CRDL; prep blanks for iron, and vanadium reported concentration above the IDL and below the CRDL.

   For water samples: continuing calibration blanks for cobalt, lead, selenium, sodium and vanadium reported concentrations above the IDL and below the CRDL; prep blanks for lead reported concentrations above the IDL and below the CRDL. These affected samples results were qualified non-detect (u) if reported concentration were above the IDL but less than five times the highest associated blank concentrations.

5. ICS: Interference check sample criteria were met.

6. LCS: Laboratory control sample results were within control limits.

7. Duplicate analysis: Gross variations between duplicate samples were not noted, except for chromium, iron, and manganese. Affected samples were qualified "j" or "uj".

8. Matrix Spike Recoveries: Antimony, arsenic, lead, and manganese were reported to be out of control limits for percent recovery. Positive hits are qualified "j", non-detects "uj".

9. MSA: MSA were within control limits except for sample MFAQ 16. However, upon rerun of MSA an acceptable result was obtained. Affected results were flagged "j", or "uj".

10. Other QC: Chromium results for all soil samples are qualified as estimated (J) or (uj) due to ICP serial dilution out of control limits. Other analytes were reported as out of control limits.

However, these were disregarded due to the low sample concentration results.

11. Field Duplicates: MFAQ14 & 15 and the pair 06 & 07 were identified as field duplicates. Gross variations were not noted in sample results except in calcium for the soil samples. The affected results were flagged estimated (j).

12. Overall Assessment:

False negatives for sodium are possible for seven samples due to calibration blank contamination. Cyanide results for water samples are qualified as estimated due to sample temperature requirements.

Chromium and manganese results for soil samples are qualified due to duplicate control limits.

Antimony, arsenic, manganese and lead results for soil sample are qualified due to matrix spike recovery control limits.

Blank concentrations as specified above were above instrument detection limits.

INORGANIC CHEMICAL DATA SUMMARY

Site Name and Code: Dixie (Tie) Petro-Chemical
Case Number: 20054
Concentrations: in milligrams per kilograms (mg/kg)
Compiled by: Fluor Daniel

		Inorganic Traffic No.	MFAQ08		MFAQ09		MFAQ10		MFAQ11		MFAQ12		MFAQ14		MFAQ15	
		Sample I.D														
		Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
		Percent Solids	73.0		79.9		84.3		79.8		74.9		88.4		88.0	
		Location: and or Sample Description:	SD-03		SS-06		SS-07		SD-08		SD-09		SS-10		SS-11	
COMPOUND NAME	**CAS NO.**	**CLASS**	**Concentration**	**Q**	**Concentration**	**Q**	**Concentration**	**Q**	**Concentration**	**Q**	**Concentration**	**Q**	**Concentration**	**Q**	**Concentration**	**Q**
ALUMINUM	7429-90-5	INO	13300		7810		2410		19700		7190		5230		3970	
ANTIMONY	7440-36-0	INO	11.2	UJ	10.3	UJ	9.7	UJ	10.3	UJ	12.2	J	9.3	UJ	9.3	UJ
ARSENIC	7440-38-2	INO	7.5	J	3.6	J	3	J	5.5	J	3.5	J	0.93	J	1.2	J
BARIUM	7440-39-3	INO	217		118		6.9	B	289		80.1		44.5	B	37.7	B
BERYLLIUM	7440-41-7	INO	1.2	B	0.65	B	0.24	U	1.9		0.39	B	0.26	B	0.23	U
CADMIUM	7440-43-9	INO	1.1	U	1	U	1.1	B	1	U	1.1	U	0.9	U	0.91	U
CALCIUM	7440-70-2	INO	23900		17100		757	B	51100		7520		6510		4430	
CHROMIUM	7440-47-3	INO	103	J	43.6	J	5.7	J	67.9	J	12.5	J	6.5	J	5.7	J
COBALT	7440-48-4	INO	3.7	B	4.1	B	1.6	B	5.2	B	2	B	1.4	U	1.4	U
COPPER	7440-50-8	INO	42.7		14.9		2	B	26.9		5.9	B	3.4	B	4.5	B
IRON	7439-89-6	INO	11500	J	15500	J	2690	J	29400	J	11600	J	5630	J	5710	J
LEAD	7439-92-1	INO	91.2		16.5		3.9		15.4		9.2		7.4		7.9	
MAGNESIUM	7439-95-4	INO	3440		3070		142	B	8210		1520		566	B	352	B
MANGANESE	7439-96-5	INO	364	J	636	J	14.1	J	973	J	92.2	J	47.4	J	39.7	J
MERCURY	7439-97-6	INO	0.14	U	0.13	U	0.12	U	0.13	U	0.13	U	0.11	U	0.11	U
NICKEL	7440-02-0	INO	5	B	7	B	2.6	U	9.4	B	19.8		27.9		29.6	
POTASSIUM	7440-09-7	INO	630	B	475	B	265	B	916	B	502	B	301	B	224	B
SELENIUM	7782-49-2	INO	0.73	J	0.5	B	0.52	B	0.8	B	0.73	B	0.39	B	0.56	B
SILVER	7440-22-4	INO	1.4	U	1.3	U	1.2	U	1.3	U	1.3	U	1.1	U	1.1	U
SODIUM	7440-23-5	INO	301	B	179	B	17.3	B	627	B	702	B	91.7	B	86.1	B
THALLIUM	7440-28-0	INO	0.27	UJ	0.25	UJ	0.26	B	0.33	J	0.27	UJ	0.23	U	0.23	U
VANADIUM	7440-62-2	INO	22.7		31		8.9	B	60.5		21.3		12.5		12.3	
ZINC	7440-66-6	INO	58.6		87.9		2.3	B	60.8		11.5		117		130	
CYANIDE		INO	0.68	U	0.63		0.59	U	0.63	U	0.67	U	0.57	U	0.57	U

LEGEND
INO – Inorganic
Q – Analytical results' Qualifier (listed below).
B – Analyte was detected above the CRDL but below 5X Blank Concentration.
J – The associated value is an estimated quantity.
R – Data for analyte is unusable.
U – The material was analyzed for but was not detected above the level of the associated value.
UJ – The material was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

INORGANIC CHEMICAL DATA SUMMARY

Site Name and Code: Dixie (Tie) Petro-Chemical
Case Number: 20054
Concentrations: In micrograms per liters (µg/L)
Compiled by: Fluor Daniel

		Inorganic Traffic No.	MFAQ04		MFAQ06		MFAQ07		MFAQ13		MFAQ17					
		Sample I.D														
		Matrix:	WATER		WATER		WATER		WATER		WATER					
		Percent Solids														
		Location: and or Sample Description:	SW-15		SW-01		SW-02		RB-21		FB-17					
COMPOUND NAME	CAS NO.	CLASS	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q
ALUMINUM	7429-90-5	INO	329		16500		14600		24	B	22	U				
ANTIMONY	7440-36-0	INO	41	U	41	U	41	U	41	U	41	U				
ARSENIC	7440-38-2	INO	1	UJ	4.1	B	3.7	B	1	UJ	1	UJ				
BARIUM	7440-39-3	INO	101	B	206		186	B	1.4	B	1	U				
BERYLLIUM	7440-41-7	INO	1	U	1.2	B	1	U	1	U	1	U				
CADMIUM	7440-43-9	INO	4	U	4	U	4	U	4	U	4	U				
CALCIUM	7440-70-2	INO	17400		45100		43500		37	U	37	U				
CHROMIUM	7440-47-3	INO	5	U	60		50.2		5	U	5	U				
COBALT	7440-48-4	INO	6	U	19.2	B	13.3	B	6	U	7.5	U				
COPPER	7440-50-8	INO	3	U	44		42.5		3	U	3	B				
IRON	7439-89-6	INO	2730		25600		22500		16.4	B	9.4	B				
LEAD	7439-92-1	INO	3.5	J	34.4	J	29.7	J	1	UJ	1	U				
MAGNESIUM	7439-95-4	INO	4930	B	5770		5600		48	U	48	U				
MANGANESE	7439-96-5	INO	131		2820		2770		2	U	2	U				
MERCURY	7439-97-6	INO	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U				
NICKEL	7440-02-0	INO	11	U	15.8	B	18.1	B	23.3	B	11	U				
POTASSIUM	7440-09-7	INO	1990	B	3050	B	2830	B	644	U	644	U				
SELENIUM	7782-49-2	INO	2.5	B	1.5	B	1.7	B	1	U	1	U				
SILVER	7440-22-4	INO	5	U	5	U	5	U	5	UJ	5	U				
SODIUM	7440-23-5	INO	15600		13500		13300		43.2	B	21	UJ				
THALLIUM	7440-28-0	INO	1	UJ	1	U	1	U	1	UJ	1	U				
VANADIUM	7440-62-2	INO	4	U	40.5	B	34.8	B	5.2	B	5.2	B				
ZINC	7440-66-6	INO	8.9	B	138		124		4	U	4	U				
CYANIDE		INO	10	UJ	10	UJ	10	UJ	10	UJ	10	UJ				

LEGEND
INO – Inorganic
Q – Analytical results' Qualifier (listed below).
B – Analyte was detected above the CRDL but below 5X Blank Concentration.
J – The associated value is an estimated quantity.
R – Data for analyte is unusable.
U – The material was analyzed for but was not detected above the level of the associated value.
UJ – The material was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

INORGANIC CHEMICAL DATA SUMMARY

Site Name and Code: Dixie (Tie) Petro-Chemical
Case Number: 20054
Concentrations: In milligrams per kilograms (mg/kg)
Compiled by: Fluor Daniel

		Inorganic Traffic No.	MFAQ16		MFAQ00		MFAQ01		MFAQ02		MFAQ03		MFAQ05			
		Sample I.D														
		Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL			
		Percent Solids	76.1		74.5		82.9		84.4		73.2		81.1			
		Location: and or Sample Description:	SS-12		SS-13		SS-04		SS-05		SD-14		SD-16			
COMPOUND NAME	CAS NO.	CLASS	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q
ALUMINUM	7429-90-5	INO	1720		5780		2240		1520		8130		6700			
ANTIMONY	7440-36-0	INO	10.8	UJ	11	UJ	10.5	J	9.7	UJ	11.2	UJ	10.1	UJ		
ARSENIC	7440-38-2	INO	2.8	J	1.8	J	1.1	J	0.44	J	4.2	J	70.6	J		
BARIUM	7440-39-3	INO	3.6	B	43.8	B	21		21.3	B	35.4	B	50.5			
BERYLLIUM	7440-41-7	INO	0.26	U	0.28	B	0.24	U	0.24	U	0.27	U	1.9			
CADMIUM	7440-43-9	INO	1.1	U	1.1		0.97	U	0.95	U	1.1	U	0.99	U		
CALCIUM	7440-70-2	INO	70.9	B	1650		997		270	B	546	B	3110			
CHROMIUM	7440-47-3	INO	4.8	J	11.3	J	7.7	J	5.4	J	15	J	80.5	J		
COBALT	7440-48-4	INO	1.6	U	4.9	B	2.6		2.1	B	2.6	B	9.9	B		
COPPER	7440-50-8	INO	1.7	B	17.1		3.7		4.8	B	15.3		16.5			
IRON	7439-89-6	INO	3080	J	11600		4600	J	2110	J	24100	J	108000	J		
LEAD	7439-92-1	INO	2.9		67.6		8.9		5.8		48.5		78.1			
MAGNESIUM	7439-95-4	INO	45.6		657	B	232		102	B	488	B	526	B		
MANGANESE	7439-96-5	INO	3.2	J	124	J	103	J	115	J	50.3	J	144	J		
MERCURY	7439-97-6	INO	0.13	U	0.13	U	0.12	U	0.12	U	0.14	U	0.12	U		
NICKEL	7440-02-0	INO	12.3		3.9	B	2.7	B	2.6	U	3	U	5.6	B		
POTASSIUM	7440-09-7	INO	169	U	391	B	272	B	153	U	530	B	279	B		
SELENIUM	7782-49-2	INO	0.5	B	0.34	B	0.24	U	0.35	J	0.65	B	1.7			
SILVER	7440-22-4	INO	1.3	U	1.3	U	1.2	U	1.2	U	1.4	U	1.2			
SODIUM	7440-23-5	INO	27.2	B	133	B	14.3	B	5.3	B	22	B	44.4	B		
THALLIUM	7440-28-0	INO	0.26	U	0.27	U	0.24	U	0.24	U	0.27	U	0.4	J		
VANADIUM	7440-62-2	INO	10.5	B	17.6		13.4		5.9	B	21.1		167			
ZINC	7440-66-6	INO	2	B	48		48.4		43.4		25.8		93.9			
CYANIDE		INO	0.66	U	0.67	U	0.6	U	0.59	U	0.68	U	0.62	U		

LEGEND
INO – Inorganic
Q – Analytical results' Qualifier (listed below).
B – Analyte was detected above the CRDL but below 5X Blank Concentration.
J – The associated value is an estimated quantity.
R – Data for analyte is unusable.
U – The material was analyzed for but was not detected above the level of the associated value.
UJ – The material was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

ATTACHMENT C

ORGANIC DATA QUALITY ASSURANCE REVIEW AND RESULTS

ORGANIC
DATA QUALITY ASSURANCE REVIEW

Site Name:	Dixie Petro Chem
Site Code:	
Case Number:	20549
Laboratory:	Clayton Environmental Consultants Novi, Mich.
Water Samples:	FZ906, 908, 909, 915, 919.
Soil Samples:	FZ902, 903, 904, 905, 907, 910, 911, 912, 913, 914, 916, 917, 918.

The data package consisted of five water and thirteen soil samples analyzed for volatile organics, semivolatile organics and pesticides/PCB's.

1. Analytical Parameters: Soil and water samples were analyzed for complete RAS CLP organics analysis.

2. Holding Times: All VOA soil samples were reported as having exceeded holding time limits except for FZ903. Samples qualified as per guidance.

3. Instrument Tunings: No qualifications were performed due to tuning/performance criteria.

4. Calibration Verification: Several VOA and BNA compounds were out of control limits for %RSD or %D calibration criteria. Affected samples were qualified as estimated.

5. Blanks: Field blank results associated to a particular group of samples must be used to qualify data. Trip blanks are used to qualify only those samples with which they were shipped and are not required for non-aqueous matrices. Typically, if sample concentration is greater than five times a blank value that is not considered a common lab artifact, no qualification is needed. If sample concentration is greater than ten times a blank value and is considered a common lab artifact, no qualification is needed. If the reported value is less than stated above, qualifications are applied in accordance with guidance. No field blank/trip blank/rinsate blank/ were reported to be associated with this SDG. Lab blanks for VOAs and BNAs were reported as containing common lab artifacts. Qualifications in accordance with guidance were made to the affected results. No contamination was reported in the Pest/PCB blank.

6. Matrix Spike Recoveries: No qualifications were performed due to MS/MSD criteria.

7. Duplicates: FZ908 & 909; & 916 & 917 were reportedly field duplicates of each other. No gross variations were noted in sample results.

8. SMC/Surrogates: Surrogate recoveries generally met QC criteria. No qualifications were performed due to surrogate recovery.

9. Target Compound Identification and Quantification: Sample spectra met identification criteria for the VOA and BNA samples. Positive hits were qualified as "P" by the laboratory and "j" by the reviewer due to two column quantitation differing by >25%.

10. General Assessment: Blanks contained some contamination. %RSD and %D were out of control limits for some analytes.

Two column quantitation was out of control limits for some Pesticide PCB analytes.

CHEMICAL DATA SUMMARY

Site Name and Code: Dixie Petro Chemical
Case Number: 20054
Concentrations: in micrograms per kilogram (µg/kg)
Compiled by: Fluor Daniel

		Organic Traffic No.																
		Sample I.D	FZ912		FZ913		FZ914		FZ914DL		FZ916		FZ916DL		FZ917		FZ918	
		Marix	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
		Percent Solids	85		91		78		78		86		86		89		80	
		Location: andor Sample Description:	SS-07		SD-08		SS-09		SS-09		SS-10		SS-10		SS-11		SS-12	
COMPOUND NAME	CAS NO.	CLASS	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q
Acetone	67-64-1	VOA	33	B	34	B	4200	B	7000	BJ	6800	B	30000	B	12000	B	36	B
2-Butanone	78-93-3	VOA	17		11		3600	B	5100	J	13000	B	16000	J	13000	B	9	J
Toluene	108-88-3	VOA	3	BJ	3	BJ	10000		17000	B	110000	J	110000	B	200000	J	7	BJ
Methylene Chloride	75-9-2	VOA	12	UJ	7	BJ	1500	UJ	1700	U	1400	UJ	28000	UJ	1300	UJ	12	BJ
1,2-Dichloroethene (Total)	540-59-0	VOA	12	UJ	11	UJ	490	J	7700	U	1100	J	28000	UJ	3100		12	UJ
Tetrachloroethene	127-18-4	VOA	12	UJ	11	UJ	1000	J	2100	J	9300		10000	J	24000		12	UJ
Ethylbenzene	100-41-4	VOA	12	UJ	11	UJ	18000		31000	J	53000	J	58000	J	68000	J	12	UJ
Xylene (Total)	1330-20-7	VOA	12	UJ	11	UJ	100000	J	160000	J	230000	J	410000	J	260000	J	2	J
1,1,1-Trichloroethane	71-55-6	VOA	12	UJ	11	UJ	1500	UJ	7700	UJ	400	J	28000	UJ	1200	J	12	UJ
Trichloroethene	79-01-6	VOA	12	UJ	11	UJ	1500	UJ	7700	UJ	1700		28000	UJ	8400	J	12	UJ
1,2-Dichloropropane	78-87-5	VOA	12	UJ	11	UJ	1500	UJ	7700	UJ	1400	UJ	28000	UJ	420	J	12	UJ

LEGEND
VOA – Volatile Organic Analysis
ABN – Acid/Base Neutral (semi-volatiles)
PEST – Pesticides/PCB Analysis
Q – Analytical results' Qualifier (listed below).
B – Analyte was detected above the CRDL but below 10X Blank Concentration.
J – The associated value is an estimated quantity.
R – Data for analyte is unusable.
U – The material was analyzed for but was not detected above the level of the associated value.
UJ – The material was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

CHEMICAL DATA SUMMARY

Site Name and Code: Dixie Petro Chemical
Case Number: 20054
Concentrations: in micrograms per kilogram (µg/kg)
Compiled by: Fluor Daniel

		Organic Traffic No.														
		Sample I.D.	FZ902		FZ903		FZ904		FZ905		FZ907		FZ910		FZ911	
		Marix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
		Percent Solids	75		77		84		79		78		83		81	
		Location: and or Sample Description:	SS-13		SS-04		SS-05		SD-14		SD-16		SD-03		SS-06	
COMPOUND NAME	**CAS NO.**	**CLASS**	**Concentration**	**Q**	**Concentration**	**Q**	**Concentration**	**Q**	**Concentration**	**Q**	**Concentration**	**Q**	**Concentration**	**Q**	**Concentration**	**Q**
Methylene Chloride	75-9-2	VOA	5	BJ	7	BJ	11	BJ	7	BJ	4	BJ	5	BJ	8	J
Toluene	108-88-3	VOA	2	BJ	2	BJ	4	J	4	BJ	2	BJ	2	BJ	21	B
1,2 Dichloroethene (Total)	540-59-0	VOA	12	J	2	J	12	UJ	13	UJ	13	UJ	6	J	13	UJ
Trichloroethene	79-01-6	VOA	12	J	2	J	12	UJ	13	UJ	13	UJ	12	UJ	3	J
Acetone	67-64-1	VOA	12	J	12	UJ	19	B	43	B	10	BJ	17	B	31	B
Tetrachloroethene	127-18-4	VOA	12	J	12	UJ	12	UJ	13	UJ	13	UJ	12	UJ	3	J
Xylenes (Total)	1330-20-7	VOA	12	J	12	UJ	12	UJ	13	UJ	13	UJ	12	UJ	7	J

LEGEND
VOA – Volatile Organic Analysis
ABN – Acid/Base Neutral (semi-volatiles)
PEST – Pesticides/PCB Analysis
Q – Analytical results' Qualifier (listed below).
B – Analyte was detected above the CRDL but below 10X Blank Concentration.
J – The associated value is an estimated quantity.
R – Data for analyte is unusable.
U – The material was analyzed for but was not detected above the level of the associated value.
UJ – The material was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

CHEMICAL DATA SUMMARY

Site Name and Code: Dixie Petro Chemical
Case Number: 20054
Concentrations: in micrograms per liter (µg/l)
Compiled by: Fluor Daniel

		Organic Traffic No.										
		Sample I.D	FZ906		FZ908		FZ909		FZ915		FZ919	
		Marix:	WATER		WATER		WATER		WATER		WATER	
		Percent Solids										
		Location: and or Sample Description:	SW-15		SW-01		SW-02		RB-21		FB-17	
COMPOUND NAME	**CAS NO.**	**CLASS**	**Concentration**	**Q**	**Concentration**	**Q**	**Concentration**	**Q**	**Concentration**	**Q**	**Concentration**	**Q**
Methylene Chloride	75-09-2	VOA	3	J	10	U	10	U	2	J	10	U
Acetone	67-64-1	VOA	3	BJ	6	BJ	4	BJ	3	BJ	2	BJ
2-Butanone	78-93-3	VOA	2	J	10	U	10	U	10	U	1	J
1,2-Dichloroethene (Total)	540-59-0	VOA	10	U	4	J	4	J	10	U	10	U
Toluene	108-88-3	VOA	10	U	10	U	10	U	1	BJ	1	BJ

LEGEND
VOA – Volatile Organic Analysis
ABN – Acid/Base Neutral (semi-volatiles)
PEST – Pesticides/PCB Analysis
Q – Analytical results' Qualifier (listed below).
B – Analyte was detected above the CRDL but below 10X Blank Concentration.
J – The associated value is an estimated quantity.
R – Data for analyte is unusable.
U – The material was analyzed for but was not detected above the level of the associated value.
UJ – The material was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

CHEMICAL DATA SUMMARY

Site Name and Code: Dixie Petro Chemical
Case Number: 20054
Concentrations: in micrograms per kilogram (µg/kg)
Compiled by: Fluor Daniel

		Organic Traffic No.													
		Sample I.D	FZ902		FZ903		FZ905		FZ911		FZ912		FZ913	
		Marix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
		Percent Solids	75		77		79		81		85		91	
		Location: and or Sample Description:	SS–13		SS–04		SD–14		SS–06		SS–07		SD–08	
COMPOUND NAME	RT/SCAN#	CLASS	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q
Naphthalene	25.08	TIC	280	J										
Benzothiophene	25.95	TIC	7	J										
$C_{11}H_{10}$ Hydrocarbon	27.23	TIC	86	J										
C_8H_{14} Hydrocarbon	16.61	TIC			10	J								
$C_{10}H_{16}$ Hydrocarbon	20.31	TIC			270	J								
$C_{10}H_{16}$ Hydrocarbon	20.90	TIC			21	J								
$C_{10}H_{16}$ Hydrocarbon	21.96	TIC			7	J								
$C_{10}H_{16}$ Hydrocarbon	23.87	TIC			10	J								
Unknown Hydrocarbon	25.59	TIC			17	J								
$C_{10}H_{16}$ Hydrocarbon	25.85	TIC			7	J								
Unknown Siloxane	27.98	TIC			10	J								
Napthalene	23.31	TIC					89	J						
Cyclotetrasiloxane, octameth	23.68	TIC							29	J				
Furan, tetrahydro–	6.96	TIC									14	J		
$C_{12}H_{12}$ Hydrocarbon	26.75	TIC									34	J		
2–Furancarboxaldehyde	19.26	TIC											15	J

LEGEND
VOA – Volatile Organic Analysis
ABN – Acid/Base Neutral (semi–volatiles)
PEST – Pesticides/PCB Analysis
Q – Analytical results' Qualifier (listed below).
B – Analyte was detected above the CRDL but below 10X Blank Concentration.
J – The associated value is an estimated quantity.
R – Data for analyte is unusable.
U – The material was analyzed for but was not detected above the level of the associated value.
UJ – The material was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

CHEMICAL DATA SUMMARY

Site Name and Code: Dixie Petro Chemical
Case Number: 20054
Concentrations: In micrograms per kilogram (µg/kg)
Compiled by: Fluor Daniel

COMPOUND NAME	RT/SCAN#	CLASS	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q
Organic Traffic No.												
Sample I.D.			FZ914		FZ914DL		FZ916		FZ916DL		FZ917	
Matrix			SOL		SOL		SOL		SOL		SOL	
Percent Solids			78		78		86		86		89	
Location and/or Sample Description			SS-09		SS-09		SS-10		SS-10		SS-11	
C_8H_{18} Hydrocarbon	13.63	TIC	11000	J								
C_9H_{20} Hydrocarbon	14.05	TIC	11000	J								
$C_{10}H_{22}$ Hydrocarbon	15.38	TIC	6800	J								
$C_{10}H_{22}$ Hydrocarbon	17.02	TIC	3400	J								
C_9H_{12} alkyl benzene	19.73	TIC	15000	J								
$C_{10}H_{22}$ Hydrocarbon	20.74	TIC	3700	J								
C_9H_{12} alkyl benzene	22.16	TIC	6500	J								
$C_{10}H_{24}$ Hydrocarbon	22.89	TIC	3400	J								
$C_{10}H_{14}$ alkyl benzene	23.48	TIC	18000	J								
$C_{11}H_{24}$ Hydrocarbon and $C_{10}H_1$	23.85	TIC	4000	J								
$C_{11}H_{24}$ Hydrocarbon and $C_{10}H_1$	25.68	TIC	4400	J								
$C_{11}H_{24}$ Hydrocarbon and $C_{10}H_1$	26.83	TIC	17000	J								
C_8H_{18} Hydrocarbon	15.37	TIC			38000	J						
C_9H_{20} Hydrocarbon	19.72	TIC			98000	J						
$C_{10}H_{22}$ Hydrocarbon	21.05	TIC			40000	J						
$C_{10}H_{22}$ Hydrocarbon	22.15	TIC			72000	J						
$C_{10}H_{22}$ Hydrocarbon	22.43	TIC			41000	J						
$C_{10}H_{22}$ Hydrocarbon	23.48	TIC			140000	J						
C_9H_{12} alkyl benzene	23.85	TIC			37000	J						
$C_{11}H_{24}$ Hydrocarbon	24.26	TIC			42000	J						
$C_{10}H_{14}$ alkyl benzene	24.81	TIC			34000	J						
$C_{11}H_{24}$ Hydrocarbon and $C_{10}H_1$	25.68	TIC			80000	J						
$C_{11}H_{24}$ Hydrocarbon and $C_{10}H_1$	25.86	TIC			46000	J						
$C_{11}H_{24}$ Hydrocarbon	26.82	TIC			14000	J						
C_9H_{20} Hydrocarbon	13.69	TIC					12000	J				
$C_{10}H_{22}$ Hydrocarbon	14.06	TIC					9700	J				
$C_{10}H_{22}$ Hydrocarbon	19.74	TIC					26000	J				
$C_{10}H_{22}$ Hydrocarbon	20.75	TIC					11000	J				
C_9H_{12} alkyl benzene	22.17	TIC					34000	J				
C_9H_{12} alkyl benzene	22.45	TIC					22000	J				
$C_{10}H_{22}$ Hydrocarbon	22.68	TIC					25000	J				
C_9H_{12} alkyl benzene	22.9	TIC					20000	J				
$C_{11}H_{24}$ Hydrocarbon	23.5	TIC					10000	J				
$C_{10}H_{12}$ Hydrocarbon	23.87	TIC					16000	J				
$C_{10}H_{14}$ alkyl benzene	24.88	TIC					10000	J				
$C_{11}H_{24}$ Hydrocarbon and $C_{10}H_1$	26.85	TIC					34000	J				
C_9H_{20} Hydrocarbon	19.72	TIC							2100000	J		
$C_{10}H_{22}$ Hydrocarbon	21.05	TIC							64000	J		
$C_{10}H_{22}$ Hydrocarbon	22.15	TIC							2400000	J		
$C_{10}H_{22}$ Hydrocarbon	22.42	TIC							1600000	J		
C_9H_{12} alkyl benzene	22.65	TIC							1500000	J		
C_9H_{12} alkyl benzene and $C_{10}H$	22.88	TIC							1300000	J		
$C_{10}H_{22}$ Hydrocarbon	23.43	TIC							4900000	J		
C_9H_{12} alkyl benzene	23.89	TIC							1300000	J		
$C_{11}H_{24}$ Hydrocarbon	24.26	TIC							1900000	J		
$C_{10}H_{12}$ Hydrocarbon	24.49	TIC							820000	J		
$C_{10}H_{14}$ alkyl benzene and C_{11}	25.68	TIC							120000	J		
$C_{11}H_{24}$ Hydrocarbon and $C_{10}H_1$	26.82	TIC							2600000	J		
C_9H_{20} Hydrocarbon	19.78	TIC									130000	J
$C_{10}H_{22}$ Hydrocarbon	22.16	TIC									180000	J
C_9H_{12} alkyl benzene and $C_{10}H$	22.44	TIC									140000	J
C_9H_{12} alkyl benzene	22.71	TIC									180000	J
C_9H_{12} alkyl benzene	22.94	TIC									140000	J
$C_{10}H_{22}$ Hydrocarbon	23.49	TIC									370000	J
C_9H_{12} alkyl benzene	23.91	TIC									130000	J
$C_{11}H_{24}$ Hydrocarbon	24.27	TIC									130000	J
$C_{10}H_{12}$ Hydrocarbon	24.55	TIC									120000	J
$C_{10}H_{14}$ alkyl benzene	25.74	TIC									100000	J
$C_{10}H_{14}$ alkyl benzene and C_9H	25.88	TIC									94000	J
$C_{11}H_{24}$ Hydrocarbon and $C_{10}H_1$	26.84	TIC									210000	J

LEGEND

VOA – Volatile Organic Analysis
ABN – Acid/Base Neutral (semi-volatiles)
PEST – Pesticides/PCB Analysis
Q – Analytical results' Qualifier (listed below).
B – Analyte was detected above the CRDL but below 10X Blank Concentration.
J – The associated value is an estimated quantity.
R – Data for analyte is unusable.
U – The material was analyzed for but was not detected above the level of the associated value.
UJ – The material was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

CHEMICAL DATA SUMMARY

Site Name and Code: Dixie Petro Chemical
Case Number: 20054
Concentrations: in micrograms per liter ($\mu g/l$)
Compiled by: Fluor Daniel

		Organic Traffic No.				
		Sample I.D	FZ906		FZ908	
		Marix:	WATER		WATER	
		Percent Solids				
		Location: and or Sample Description:	SW-15		SW-01	
COMPOUND NAME	**RT/SCAN#**	**CLASS**	**Concentration**	**Q**	**Concentration**	**Q**
17-H-Cyclopenta[a]phenanthrene	7.7	TIC	6	J		
2-Furanmethanol, tetrahydro-	7.84	TIC	9	J		
Benzene,1,2,3,4-tetrachloro	27.48	TIC	15	J		
Unknown Hydrocarbon and Unknown	23.62	TIC			5	J

LEGEND
VOA – Volatile Organic Analysis
ABN – Acid/Base Neutral (semi-volatiles)
PEST – Pesticides/PCB Analysis
Q – Analytical results' Qualifier (listed below).
B – Analyte was detected above the CRDL but below 10X Blank Concentration.
J – The associated value is an estimated quantity.
R – Data for analyte is unusable.
U – The material was analyzed for but was not detected above the level of the associated value.
UJ – The material was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

CHEMICAL DATA SUMMARY

Site Name and Code: Dixie Petro Chemical
Case Number: 20054
Concentrations: in micrograms per kilogram (µg/kg)
Compiled by: Fluor Daniel

		Organic Traffic No.				
		Sample I.D.	FZ902		FZ903	
		Matrix:	SOIL		SOIL	
		Percent Solids	75		77	
		Location and or Sample Description:	SS-13		SS-04	
COMPOUND NAME	RT/SCAN	CLASS	Concentration	Q	Concentration	Q
C_9H_{20} Hydrocarbon	4.31	TIC	1300	J		
4-Hydroxy-4-methyl-2-pentano	4.84	TIC	41000	J		
Unknown Ketone or Ester	5.76	TIC	1100	J		
C_9H_{20} Hydrocarbon	5.99	TIC	2800	J		
3-Hexene-2,5-dione	6.23	TIC	1100	J		
Unknown Ketone or Ester	6.56	TIC	190	J		
Unknown Ketone or Ester	8.13	TIC	1100	J		
Unknown Ketone or Ester	22.32	TIC	550	J		
Terphenyl	23.04	TIC	250	J		
$C_{18}H_{16}$ Hydrocarbon	23.3	TIC	270	J		
Unknown Hydrocarbon	23.35	TIC	230	BJ		
$C_{18}H_{16}$ Hydrocarbon	23.94	TIC	200	J		
Octadecanoic Acid, butyl est	24.08	TIC	300	JB		
Unknown Hydrocarbon	24.19	TIC	260	BJ		
$C_{14}H_{10}$ Hydrocarbon	25.05	TIC	990	J		
Unknown Hydrocarbon	25.83	TIC	230	BJ		
Unknown Hydrocarbon	26.61	TIC	590	BJ		
Unknown Hydrocarbon	28.23	TIC	560	BJ		
$C_{20}H_{12}$ Hydrocarbon	28.79	TIC	380	BJ		
Unknown Hydrocarbon	30.39	TIC	780	BJ		
Unknown	33.30	TIC	4800	J		
Unknown Hydrocarbon	33.45	TIC	520	BJ		
$C_{22}H_{14}$ Hydrocarbon	33.76	TIC	340	J		
Unknown Ketone or Ester	4.29	TIC			650	J
4-Hydroxy-4-methyl-2-pentano	4.82	TIC			39000	J
Unknown Ketone or Ester	5.74	TIC			990	J
C_9H_{20} Hydrocarbon	5.98	TIC			2700	J
3-Hexane-2, 5-dione	6.23	TIC			870	J
Unknown Ketone or Ester	6.8	TIC			360	J
Unknown Ketone or Ester	8.17	TIC			2100	J
Phenanthrene carboxylic Acid	23.97	TIC			1000	J
Unknown Hydrocarbon	25.04	TIC			380	BJ
Phenol, 3-pentadecyl	25.2	TIC			570	J
Unknown Aldehyde	26.17	TIC			420	J
Unknown Hydrocarbon	26.62	TIC			740	BJ
Unknown Hydrocarbon	26.84	TIC			400	BJ
Unknown Hydrocarbon	28.26	TIC			1600	BJ
Unknown Acid	29.84	TIC			5400	J
Unknown	30.27	TIC			920	J
Unknown Hydrocarbon	30.42	TIC			1900	BJ
Unknown Hydrocarbon	30.70	TIC			1200	J
Unknown Acid	31.18	TIC			430	J
Unknown	33.31	TIC			640	J
Unknown Hydrocarbon	33.47	TIC			1100	BJ
$C_{30}H_{50}$ Hydrocarbon	35.09	TIC			1400	J
Unknown Hydrocarbon	36.10	TIC			630	J

LEGEND
VOA – Volatile Organic Analysis
ABN – Acid/Base Neutral (semi– volatiles)
PEST – Pesticides/PCB Analysis
Q – Analytical results' Qualifier (listed below).
B – Analyte was detected above the CRDL but below 10X Blank Concentration.
J – The associated value is an estimated quantity.
R – Data for analyte is unusable.
U – The material was analyzed for but was not detected above the level of the associated value.
UJ – The material was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

CHEMICAL DATA SUMMARY

Site Name and Code: Dixie Petro Chemical
Case Number: 20054
Concentrations: in micrograms per kilogram (ug/kg)
Compiled by: Fluor Daniel

		Organic Traffic No.				
		Sample ID	FZ904		FZ905	
		Matrix	SOL		SOL	
		Percent Solids	84		79	
		Location and or Sample Description:	SS-05		SD-14	
COMPOUND NAME	CAS NO.	CLASS	Concentration	Q	Concentration	Q
Unknown Ketone or Ester	4.23	TIC	770	J		
Unknown Ketone or Ester	4.31	TIC	740	J		
4-Hydroxy-4-methyl-2-pentanone	4.76	TIC	25000	J		
Unknown Ketone or Ester	5.82	TIC	350	BJ		
3-Hexane-2, 5-dione	6.35	TIC	430	JB		
Unknown Ketone or Ester	7.08	TIC	450	J		
C15H24 Hydrocarbon	14.47	TIC	270	J		
C15H24 Hydrocarbon	16.69	TIC	160	J		
Unknown	23.12	TIC	450	J		
Unknown	23.38	TIC	400	J		
Unknown	24.08	TIC	280	J		
Unknown	24.30	TIC	210	J		
Unknown	24.47	TIC	200	J		
Unknown	24.57	TIC	890	J		
Unknown	24.88	TIC	9600	J		
Unknown	26.33	TIC	190	J		
Unknown Hydrocarbon	26.78	TIC	170	J		
Unknown Hydrocarbon	28.43	TIC	290	J		
Unknown Hydrocarbon	30.66	TIC	510	J		
Unknown Hydrocarbon	33.83	TIC	240	J		
Unknown Ketone or Ester	4.21	TIC			610	J
4-Hydroxy-4-methyl-2-pentanone	4.86	TIC			39000	JB
Unknown Ketone or Ester	5.76	TIC			890	BJ
C9H20 Hydrocarbon	5.98	TIC			1000	J
3-Hexane-2,5-dione	6.25	TIC			860	JB
Unknown Ketone or Ester	8.21	TIC			2600	J
Unknown Aromatic	22.04	TIC			640	J
C16H100 Hydrocarbon & Unknown	22.39	TIC			1400	J
C16H32 Hydrocarbon	22.49	TIC			830	J
C16H100 Hydrocarbon	22.57	TIC			1100	J
C17H12 Hydrocarbon	22.84	TIC			950	J
C18H16 Hydrocarbon	23.07	TIC			730	J
C17H12 Hydrocarbon	23.13	TIC			1500	J
C17H12 Hydrocarbon	23.29	TIC			2700	J
C18H16 Hydrocarbon	23.38	TIC			1300	J
Octadecanoic Acid, butyl est	24.09	TIC			1700	J
C18H14 Hydrocarbon & Unknown	24.2	TIC			1300	J
C16H105 Hydrocarbon	24.71	TIC			820	J
Unknown Hydrocarbon	25.02	TIC			1400	J
Unknown Hydrocarbon	25.84	TIC			910	J
Unknown Hydrocarbon	26.62	TIC			1000	J
Unknown Hydrocarbon	27.38	TIC			850	J
Unknown Hydrocarbon	28.25	TIC			530	J

LEGEND
VOA – Volatile Organic Analysis
ABN – Acid/Base Neutral (semi-volatiles)
PEST – Pesticides/PCB Analysis
Q – Analytical results' Qualifier (listed below).
B – Analyte was detected above the CRDL but below 10X Blank Concentration.
J – The associated value is an estimated quantity.
R – Data for analyte is unusable.
U – The material was analyzed for but was not detected above the level of the associated value.
UJ – The material was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

CHEMICAL DATA SUMMARY

Site Name and Code: Dixie Petro Chemical
Case Number: 20054
Concentrations: in micrograms per kilogram (ug/kg)
Compiled by: Fluor Daniel

		Organic Traffic No.				
		Sample I.D.	FZ905DL		FZ907	
		Matrix	SOL		SOL	
		Percent Solids	79		76	
		Location: and or Sample Description:	SD-14		SD-16	
COMPOUND NAME	CAS NO.	CLASS	Concentration	Q	Concentration	Q
Unknown Ketone or Ester	4.22		41000	J		
4-hydroxy-4-methyl-2-pentano	4.71		690000	JB		
Unknown Ketone or Ester	5.83		9000	BJ		
3-Hexane-2, 5-done	6.34		8100	JB		
Unknown Ketone or Ester	7.07		6100	J		
Unknown Ketone or Ester	8.24		18000	J		
C11H 10Hydrocarbon	12.5		7700	J		
C12H 10Hydrocarbon	13.46		4600	J		
C12H 26Hydrocarbon	13.86		3400	J		
C12H 12Hydrocarbon	14.03		3700	J		
C14H 12Hydrocarbon	17.72		3500	J		
C12H 8s Hydrocarbon	18.44		5600	J		
C15H 12Hydrocarbon	20.03		4400	J		
C15H 12Hydrocarbon	20.11		5300	J		
C15H 10Hydrocarbon	20.29		14000	J		
C17H 12Hydrocarbon	23.31		3400	J		
C17H 12Hydrocarbon	23.48		3700	J		
C17H 12Hydrocarbon	23.89		3100	J		
C10H 10s Hydrocarbon	24.91		3200	J		
C18H 12Hydrocarbon	25.83		3800	J		
Unknown Hydrocarbon	26.93		3100	J		
C20H 12Hydrocarbon	29.06		9800	J		
Unknown Ketone or Ester	4.41				990	J
4-Hydroxy-4-methyl-2 pentano	4.78				34000	JB
Unknown Ketone or Ester	5.72				810	J
C9H20 Hydrocarbon	5.96				1300	J
3-Hexane-2,5-dione	6.25				1400	J
Unknown Ketone or Ester	8.12				1400	J
C11H 10Hydrocarbon	18.86				810	J
C15H 12Hydrocarbon	19.88				650	J
C15H 10Hydrocarbon	20.21				1700	J
C17H 12Hydrocarbon	23.37				740	J
Unknown Hydrocarbon & C16H	24.21				2400	J
C17H 26Hydrocarbon	24.42				780	J
C16H 10s Hydrocarbon	24.75				1500	J
C16H 12Hydrocarbon	24.83				1200	J
C16H 10Hydrocarbon	24.89				1000	J
C16H10s Hydrocarbon & Unknown	24.98				790	J
Unknown Hydrocarbon	25.06				1700	BJ
C14H 10Hydrocarbon	25.1				1400	J
C18H 12Hydrocarbon	25.68				2100	J
Unknown Hydrocarbon	25.86				1000	BJ
Unknown Hydrocarbon	26.65				1500	JB
Unknown Hydrocarbon	28.28				630	JB
C20H 12Hydrocarbon	28.88				2100	J

LEGEND
VOA – Volatile Organic Analysis
ABN – Acid/Base Neutral (semi-volatiles)
PEST – Pesticides/PCB Analysis
Q – Analytical results' Qualifier (listed below).
B – Analyte was detected above the CRDL but below 10X Blank Concentration.
J – The associated value is an estimated quantity.
R – Data for analyte is unusable.
U – The material was analyzed for but was not detected above the level of the associated value.
UJ – The material was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

CHEMICAL DATA SUMMARY

Site Name and Code: Dixie Petro Chemical
Case Number: 20054
Concentrations: in micrograms per kilogram (µg/kg)
Compiled by: Fluor Daniel

		Organic Traffic No				
		Sample I.D	FZ907DL		FZ910	
		Marix	SOIL		SOIL	
		Percent Solids	78		83	
		Location and or Sample Description	SD-16		SD-03	
COMPOUND NAME	**RT/SCAN#**	**CLASS**	**Concentration**	**Q**	**Concentration**	**Q**
Unknown Ketone or Ester	4.21	TIC	2600	J		
4-hydroxy-4-methyl-2-pentano	4.6	TIC	49000	JB		
C13H100 Hydrocarbon	16.96	TIC	2200	J		
Unknown	17.26	TIC	1100	J		
Unknown Hydrocarbon	17.32	TIC	1900	J		
C14H12 Hydrocarbon	17.73	TIC	1300	J		
C12H8s Hydrocarbon	18.45	TIC	2300	J		
C15H12 Hydrocarbon	20.02	TIC	1900	J		
C15H12 Hydrocarbon	20.10	TIC	1400	J		
C15H10 Hydrocarbon	20.31	TIC	6000	J		
C16H12 Hydrocarbon	20.82	TIC	1300	J		
C18H14 Hydrocarbon	22.92	TIC	1500	J		
C17H12 Hydrocarbon	23.03	TIC	1300	J		
C17H12 Hydrocarbon	23.31	TIC	1400	J		
C17H12 Hydrocarbon	23.48	TIC	2000	J		
C18H16 Hydrocarbon	23.56	TIC	1500	J		
C18H24 Hydrocarbon & Unknown	24.36	TIC	1200	J		
C17H26 Hydrocarbon	24.56	TIC	2500	J		
C16h10s Hydrocarbon	24.91	TIC	1900	J		
C14H10 Hydrocarbon	25.26	TIC	1400	J		
C18H12 Hydrocarbon	25.81	TIC	2000	J		
Unknown Hydrocarbon	26.79	TIC	1400	J		
C20H12 Hydrocarbon	29.09	TIC	2000	J		
Benzene, methyl-	3.45	TIC			470	JB
Unknown Ketone or Ester	4.28	TIC			1300	J
4-Hydroxy-4-methyl-2-pentano	4.69	TIC			21000	JB
3-Hexene-2, 5-dione	6.2	TIC			390	J
Unknown Hydrocarbon	14.67	TIC			490	J
C14H12 Hydrocarbon	15.08	TIC			200	J
Unknown	15.3	TIC			290	J
Unknown Hydrocarbon	15.96	TIC			330	J
Unknown Hydrocarbon	17.19	TIC			1000	J
C10H22 Hydrocarbon & C19H1	17.89	TIC			540	J
Unknown	18.12	TIC			200	J
C19H24 Hydrocarbon &C11H1	18.22	TIC			480	J
Unknown Hydrocarbon	18.35	TIC			530	J
Unknown	18.41	TIC			520	J
C18H22 Hydrocarbon	18.51	TIC			280	J
Unknown Hydrocarbon	19.46	TIC			530	J
Unknown	19.75	TIC			280	J
Unknown	19.81	TIC			500	J
Unknown	20.1	TIC			350	J
Unknown	20.18	TIC			780	J
Unknown	20.3	TIC			1500	J
Unknown Hydrocarbon	20.51	TIC			390	J
Unknown Hydrocarbon	21.5	TIC			310	J

LEGEND
VOA - Volatile Organic Analysis
ABN - Acid/Base Neutral (semi- volatiles)
PEST - Pesticides/PCB Analysis
Q - Analytical results' Qualifier (listed below).
B - Analyte was detected above the CRDL but below 10X Blank Concentration.
J - The associated value is an estimated quantity.
R - Data for analyte is unusable.
U - The material was analyzed for but was not detected above the level of the associated value.
UJ - The material was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

H:\LYTWYNA\LOTUS31\DIXSEMT4.WK3

CHEMICAL DATA SUMMARY

Site Name and Code: Dixie Petro Chemical
Case Number: 20054
Concentrations: in micrograms per kilogram (ug/kg)
Compiled by: Fluor Daniel

		Organic Traffic No.				
		Sample I.D.	FZ911		FZ912	
		Marix:	SOIL		SOIL	
		Percent Solids	79		85	
		Location and or Sample Description:	SS-06		SS-07	
COMPOUND NAME	RT/SCAN#	CLASS	Concentration	Q	Concentration	Q
Benzene, methyl	3.45	TIC	170	JB		
Unknown Ketone or Ester	4.43	TIC	2300	J		
4-Hydroxy-4-methyl-2-pentano	4.88	TIC	6000	JB		
Unknown Ketone or Ester	5.29	TIC	87	J		
Unknown Ketone or Ester	5.78	TIC	1200	J		
C9H20 Hydrocarbon	6.00	TIC	1500	J		
3-Hexene-2, 5-dione	6.27	TIC	1300	J		
Unknown Ketone or Ester	6.45	TIC	130	J		
Unknown Ketone or Ester	6.57	TIC	180	J		
Unknown	6.82	TIC	230	J		
Unknown Ketone or Ester	8.13	TIC	1100	J		
Unknown Hydrocarbon	17.15	TIC	100	J		
Unknown Hydrocarbon	18.81	TIC	100	J		
Unknown Ketone or Ester	20.09	TIC	130	J		
Unknown Hydrocarbon	20.25	TIC	270	J		
Unknown Acid	20.35	TIC	310	J		
Unknown Alcohol	20.48	TIC	130	J		
Unknown Hydrocarbon	21.48	TIC	110	J		
Unknown Hydrocarbon	22.43	TIC	100	J		
Unknown Hydrocarbon	28.33	TIC	520	BJ		
Benzene, methyl-	3.49	TIC			110	JB
Unknown	3.86	TIC			83	BJ
Unknown Ketone or Ester	4.31	TIC			1100	J
4-Hydroxy-4-methyl-2-pentano	4.94	TIC			30000	JB
Unknown Ketone or Ester	5.80	TIC			830	BJ
C9H20 Hydrocarbon	6.00	TIC			350	J
3-Hexene-2, 5-dione	6.23	TIC			310	JB
Unknown Ketone or Ester	8.14	TIC			380	J

LEGEND
VOA – Volatile Organic Analysis
ABN – Acid/Base Neutral (semi-volatiles)
PEST – Pesticides/PCB Analysis
Q – Analytical results' Qualifier (listed below).
B – Analyte was detected above the CRDL but below 10X Blank Concentration.
J – The associated value is an estimated quantity.
R – Data for analyte is unusable.
U – The material was analyzed for but was not detected above the level of the associated value.
UJ – The material was analyzed for but was not detected. The associated value is an estimate and may b

CHEMICAL DATA SUMMARY

Site Name and Code: Dixie Petro Chemical
Case Number: 20054
Concentrations: in micrograms per kilogram (µg/kg)
Compiled by: Fluor Daniel

		Organic Traffic No.				
		Sample I.D	FZ913		FZ914	
		Marix	SOL		SOL	
		Percent Solids	91		78	
		Location: and or Sample Description:	SD-08		SS-09	
COMPOUND NAME	RT/SCAN#	CLASS	Concentration	Q	Concentration	Q
3-Penten-2-one, 4-methyl-	5.38	TIC	620	J		
Unknown Ketone or Ester	5.88	TIC	910	J		
C9H20 Hydrocarbon	6.02	TIC	1100	J		
4-Hydroxy-4-methyl-2-pentano	6.65	TIC	40000	JB		
Unknown Ketone or Ester	7.78	TIC	1400	J		
C9H20 Hydrocarbon	8.07	TIC	3000	J		
3-Hexene-2, 5-dione	8.39	TIC	650	JB		
Unknown Ketone or Ester	9.35	TIC	840	J		
Unknown Ketone or Ester	10.62	TIC	2400	J		
Hexadecanoic Acid	25.58	TIC	560	J		
Unknown	29.93	TIC	480	J		
Unknown	35.10	TIC	390	J		
Unknown Hydrocarbon	37.36	TIC	420	J		
Unknown	38.03	TIC	670	J		
C15H24 Hydrocarbon	38.40	TIC	650	J		
Unknown	39.59	TIC	680	J		
Unknown	39.96	TIC	650	J		
Unknown	40.01	TIC	630	J		
Unknown	40.49	TIC	380	J		
Unknown	40.69	TIC	1200	J		
Unknown	41.71	TIC	390	J		
Unknown Hydrocarbon	41.95	TIC	470	J		
Unknown	42.60	TIC	350	J		
4-Hydroxy-4-methyl-2-pentano	4.91	TIC			650000	JB
C8H10 Hydrocarbon	5.12	TIC			170000	J
C9H20 Hydrocarbon & C8H10	5.51	TIC			130000	J
C10H22 Hydrocarbon	5.86	TIC			31000	J
C9H18 Hydrocarbon	6.04	TIC			50000	J
3-Hexene-2, 5-dione	6.39	TIC			36000	JB
C10H22 Hydrocarbon & C9H1	6.51	TIC			54000	J
Unknown Hydrocarbon	6.59	TIC			97000	J
C10H22 Hydrocarbon	6.69	TIC			53000	J
C10H22 Hydrocarbon	7.24	TIC			210000	J
C9H12 Alkyl Benzene	7.68	TIC			57000	J
C10H20 Hydrocarbon	7.84	TIC			31000	J
C10H14 Alkyl Benzene & C11	8.17	TIC			68000	J
C11H24 Hydrocarbon & C10H	8.29	TIC			130000	J
C11H24 Hydrocarbon & C10H	8.41	TIC			58000	J
C10H14 Alkyl Benzene	8.76	TIC			63000	J
C11H24 Hydrocarbon	8.94	TIC			180000	J
C10H14 Alkyl Benzene & C12	9.31	TIC			31000	J
C11H16 Alkyl Benzene & C12	9.56	TIC			35000	J
C12H26 Hydrocarbon	9.76	TIC			31000	J
C10H12 Hydrocarbon	9.85	TIC			38000	J
C13H28 Hydrocarbon	9.93	TIC			36000	J
C13H28 Hydrocarbon	10.03	TIC			32000	J

LEGEND
VOA – Volatile Organic Analysis
ABN – Acid/Base Neutral (semi-volatiles)
PEST – Pesticides/PCB Analysis
Q – Analytical results' Qualifier (listed below).
B – Analyte was detected above the CRDL but below 10X Blank Concentration.
J – The associated value is an estimated quantity.
R – Data for analyte is unusable.
U – The material was analyzed for but was not detected above the level of the associated value.
UJ – The material was analyzed for but was not detected. The associated value is an estimate

H:\DXSEMT6.WK3

CHEMICAL DATA SUMMARY

Site Name and Code: Dixie Petro Chemical
Case Number: 20054
Concentrations: in micrograms per kilogram (µg/kg)
Compiled by: Fluor Daniel

COMPOUND NAME	RT/SCAN#	CLASS	Concentration	Q	Concentration	Q	Concentration	Q
Organic Traffic No.								
Sample I.D.			FZ916		FZ917		FZ918	
Matrix			SOIL		SOIL		SOIL	
Percent Solids			86		89		80	
Location and/or Sample Description			SS-10		SS-11		SS-12	
4-Hydroxy-4-methyl-2-pentanone	6.29	TIC	37000	JB				
C_8H_{10} Hydrocarbon	6.54	TIC	7300	J				
C_8H_{10} Hydrocarbon	6.74	TIC	24000	J				
C_8H_{10} Hydrocarbon	7.22	TIC	12000	J				
C_9H_{20} Hydrocarbon	7.26	TIC	10000	J				
$C_{10}H_{22}$ Hydrocarbon	7.98	TIC	8600	J				
$C_{10}H_{22}$ Hydrocarbon	8.57	TIC	13000	J				
$C_{10}H_{22}$ Hydrocarbon	8.66	TIC	13000	J				
C_9H_{12} Alkyl Benzene	8.68	TIC	15000	J				
$C_{10}H_{22}$ Hydrocarbon	8.80	TIC	11000	J				
C_9H_{16}o Hydrocarbon	9.11	TIC	10000	J				
$C_{10}H_{22}$ Hydrocarbon	9.46	TIC	46000	J				
$C_{11}H_{24}$ Hydrocarbon	9.91	TIC	9700	J				
C_9H_{12} Hydrocarbon	10.04	TIC	16000	J				
$C_{10}H_{20}$ Hydrocarbon & Unknown	10.16	TIC	7400	J				
$C_{10}H_{14}$ Hydrocarbon	10.56	TIC	12000	J				
$C_{11}H_{24}$ Hydrocarbon & C10H1	10.70	TIC	8100	J				
$C_{11}H_{24}$ Hydrocarbon & C10H1	10.77	TIC	11000	J				
$C_{11}H_{24}$ Hydrocarbon	10.91	TIC	8400	J				
$C_{11}H_{24}$ Hydrocarbon	11.53	TIC	15000	J				
$C_{14}H_{14}$ Hydrocarbon	19.04	TIC	23000	J				
$C_{16}H_{18}$ Hydrocarbon	21.59	TIC	11000	J				
$C_{16}H_{18}$ Hydrocarbon	22.09	TIC	7700	J				
2-Pentanone,4-Hydroxy-4-met	6.3	TIC			23000	JB		
Ethyl Benzene or Xylene	6.8	TIC			32000	J		
Ethyl Benzene or Xylene	7.27	TIC			18000	J		
$C_{10}H_{22}$ Hydrocarbon	8.63	TIC			17000	J		
C_9H_{12} Alkyl Benzene & C10H	8.71	TIC			17000	J		
C_9H_{12} Hydrocarbon	8.74	TIC			20000	J		
$C_{10}H_{22}$ Hydrocarbon	8.85	TIC			15000	J		
C_9H_{12} Hydrocarbon	9.12	TIC			12000	J		
$C_{11}H_{24}$ Hydrocarbon	9.49	TIC			52000	J		
$C_{11}H_{24}$ Hydrocarbon	9.94	TIC			11000	J		
C_9H_{12} Hydrocarbon	10.07	TIC			23000	J		
$C_{10}H_{12}$ Hydrocarbon	10.17	TIC			18000	J		
$C_{10}H_{14}$ Hydrocarbon	10.59	TIC			25000	J		
$C_{10}H_{18}$ Hydrocarbon	10.78	TIC			13000	J		
$C_{11}H_{24}$ Hydrocarbon	11.55	TIC			18000	J		
$C_{14}H_{14}$ Hydrocarbon	19.10	TIC			33000	J		
$C_{16}H_{18}$ Hydrocarbon	21.65	TIC			22000	J		
$C_{16}H_{18}$ Hydrocarbon	22.14	TIC			14000	J		
$C_{17}H_{36}$ Hydrocarbon	22.92	TIC			15000	J		
$C_{18}H_{38}$ Hydrocarbon	23.44	TIC			27000	J		
$C_{18}H_{22}$ Hydrocarbon	23.79	TIC			31000	J		
$C_{18}H_{22}$ Hydrocarbon	24.31	TIC			41000	J		
$C_{19}H_{40}$ Hydrocarbon	24.8	TIC			29000	J		
Benzene, methyl-	3.62	TIC					320	JB
Unknown Ketone or Ester	4.45	TIC					1300	J
4-Hydroxy-4-methyl-1-pentanone	5.07	TIC					49000	JB
C_8H_{10} Hydrocarbon	5.13	TIC					1200	J
C_8H_{10} Hydrocarbon	5.47	TIC					690	J
Unknown Ketone or Ester	5.92	TIC					1000	J
3-Hexene-2,5-dione	6.39	TIC					1200	JB
C_9H_{12} Hydrocarbon	6.48	TIC					380	J
C_9H_{12} Alkyl Benzene	6.6	TIC					400	J
$C_{10}H_{22}$ Hydrocarbon	6.66	TIC					300	J
C_9H_{12} Alkyl Benzene	6.74	TIC					250	J
$C_{10}H_{14}$ Alkyl Benzene	8.07	TIC					320	J
$C_{10}H_{14}$ Alkyl Benzene	8.23	TIC					270	J
Unknown Hydrocarbon	14.82	TIC					420	J
Unknown	17.38	TIC					390	J
$C_{18}H_{22}$ Hydrocarbon	18.65	TIC					1200	J
Unknown	19.04	TIC					250	J
$C_{18}H_{22}$ Hydrocarbon	19.12	TIC					870	J
Unknown Hydrocarbon	19.57	TIC					1000	J
Unknown	19.98	TIC					260	J
Unknown Hydrocarbon	20.62	TIC					290	J
Unknown Hydrocarbon	21.62	TIC					230	J
Unknown Hydrocarbon	25.22	TIC					260	J

LEGEND
VOA – Volatile Organic Analysis
ABN – Acid/Base Neutral (semi-volatiles)
PEST – Pesticides/PCB Analysis
Q – Analytical results' Qualifier (listed below).
B – Analyte was detected above the CRDL but below 10X Blank Concentration.
J – The associated value is an estimated quantity.
R – Data for analyte is unusable.
U – The material was analyzed for but was not detected above the level of the associated value.
UJ – The material was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

H:\LYTWYNAL\LOTUS\21006\M17.WK3

CHEMICAL DATA SUMMARY

Site Name and Code: Dixie Petro Chemical
Case Number: 20054
Concentrations: in micrograms per liter (µg/l)
Compiled by: Fluor Daniel

		Organic Traffic No.										
		Sample I.D	FZ906		FZ909		FZ915		FZ919		FZ908	
		Matrix:	WATER		WATER		WATER		WATER		WATER	
		Percent Solids										
		Location: and or Sample Description:	SW-15		SW-02		RB-21		FB-17		SW-01	
COMPOUND NAME	RT/SCAN#	CLASS	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q	Concentration	Q
Unknown	4.87	TIC	2	BJ								
Dichloroiodomethane	4.45	TIC			4	J						
Unknown	4.86	TIC			9	BJ						
2-Cyclohexen-1-ol	5.41	TIC			5	J						
2-Cyclohexen-1-one	6.19	TIC			5	J						
Unknown	11.03	TIC			6	J						
Unknown	22.52	TIC			56	BJ						
$C_{17}H_{36}$ Hydrocarbon	22.63	TIC			11	BJ						
1-Hexadecanol	22.71	TIC			13	J						
$C_{23}H_{48}$ Hydrocarbon	23.54	TIC			14	BJ						
Octadecanoic Acid, butyl est	24.32	TIC			38	JB						
$C_{24}H_{50}$ Hydrocarbon	24.42	TIC			17	BJ						
$C_{20}H_{40}$ Hydrocarbon	24.50	TIC			5	BJ						
Unknown	24.92	TIC			6	BJ						
Unknown	25.02	TIC			3	BJ						
$C_{25}H_{52}$ Hydrocarbon	25.27	TIC			15	BJ						
$C_{26}H_{54}$ Hydrocarbon	26.07	TIC			13	BJ						
$C_{27}H_{56}$ Hydrocarbon	26.86	TIC			11	BJ						
$C_{28}H_{58}$ Hydrocarbon	27.66	TIC			17	BJ						
$C_{29}H_{60}$ Hydrocarbon	28.54	TIC			16	BJ						
$C_{30}H_{62}$ Hydrocarbon	29.60	TIC			10	BJ						
$C_{31}H_{64}$ Hydrocarbon	30.83	TIC			8	BJ						
$C_{32}H_{66}$ Hydrocarbon	32.29	TIC			5	BJ						
$C_{33}H_{68}$ Hydrocarbon	34.06	TIC			4	J						
Unknown	18.24	TIC					2	J				
Unknown	19.85	TIC					8	J				
Unknown Oxygenated Compound	24.23	TIC					2	J				
Unknown	27.67	TIC					2	J				
Unknown	12.93	TIC							2	J		
Unknown	18.24	TIC							2	J		
Unknown	19.86	TIC							7	J		
Unknown	28.38	TIC							4	J		
Dichloroiodomethane	4.46	TIC									3	J
Unknown	4.85	TIC									3	BJ
2-Cyclohexen-1ol	5.4	TIC									4	J
2-Cyclohexen-one	6.17	TIC									4	J
Unknown	11.03	TIC									5	J
Benzothiazole	11.22	TIC									2	JB

LEGEND
VOA – Volatile Organic Analysis
ABN – Acid/Base Neutral (semi-volatiles)
PEST – Pesticides/PCB Analysis
Q – Analytical results' Qualifier (listed below).
B – Analyte was detected above the CRDL but below 10X Blank Concentration.
J – The associated value is an estimated quantity.
R – Data for analyte is unusable.
U – The material was analyzed for but was not detected above the level of the associated value.
UJ – The material was analyzed for but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

ATTACHMENT D

DRINKING WATER SAMPLE DATA REPORT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

DATE: July 1, 1993

SUBJECT: Notice of Intent to Dispose of Samples

FROM: Diana G. Ayers, Chief, Houston Branch; 6E-H

TO: Ragan Broyles, Chief,
Surveillance Branch; 6E-S

The Houston Laboratory is required to dispose of all hazardous wastes we generate in a manner consistent with RCRA regulations. This includes all samples received for analysis provided we find them to contain contaminants which classify them as RCRA hazardous wastes. In addition, any samples found to contain PCBs must be disposed of according to TCSA regulations.

I have included this memorandum in the final analytical report to serve as notice to the program that we have completed all analysis. If we have any of the original sample remaining after analysis is complete we will dispose of it within 90 days. Please note that even though original sample may be left over, it does not mean that a reanalysis of the sample may be requested since the sample has most likely exceeded its holding time and any subsequent analysis may not be valid.

If you have a need to hold these samples in custody longer than 90 days, please sign below and return this memorandum to me within the next 30 days. Also, state briefly your need to hold these samples in custody.

Thank you for your cooperation in this request.

Dixie (TEI) Petro-Chemical

Facility Name

Program Manager Date

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

DATE: July 2, 1993

SUBJECT: Laboratory Results for Dixie (TEI) Petro-Chemical

FROM: Diana G. Ayers, Chief, Houston Branch; 6E-H Don L. Payne for

TO: Ragan Broyles, Chief, Surveillance Branch; 6E-S

ATTN: Stacey Bennett; 6E-SH

Attached are the analytical results for the subject site. Three (3) samples were received on May 26, 1993 to be analyzed for ABNs, VOAs, pesticides, PCBs, metals, and cyanide.

This is a final report.

Attachments

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM:

Date: June 30, 1993

Subject: Laboratory Results for Dixie (TEI) Petro-Chemical

From: David C. Stockton, Chief, Inorganic Lab Section, (6E-HI)

To: Diana G. Ayers, Chief, Houston Branch, (6E-H)

Attached are laboratory results for the subject site. Three (3) water samples were received on May 26, 1993 to be analyzed for metals and Cyanide.

The laboratory numbers assigned were 3TFADW2701 through 3TFADW2703.

This is a final report.

Attachments (3)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

DATE: July 1, 1993

SUBJECT: Organic Laboratory Results for Dixie (TEI) Petro-Chemical

FROM: Michael Daggett, Chief, Organic Section, 6E-HO

TO: Diana G. Ayers, Chief, Houston Branch, 6E-H

Attached are the Organic Laboratory results for the subject site. Three (3) water samples were received for organic analysis on May 26, 1993. These samples were analyzed for VOA's, ABN's, and Pesticide/PCB's. There were no organic compounds detected in these samples.

The laboratory numbers assigned were 3TFADW27-01 through 3TFADW27-03.

This is a final report.

Attachments

June 24, 1993

U.S. Environmental Protection Agency

Houston Branch Management System

Report for Sample Number 3TFADW2701

Source: DIXIE (TEI) PETRO-CHEMICAL

Site Description: STA # DW-18

Date/Time Received: 5/26/93 10:25

Date/Time Collected: 5/25/93 16:00

Sample Type: DW

Date Completed: 6/30/93

Comments:

Parameter	Description	Section	Status	Report Date
ABN	ACID/BASE NEUTRALS	ORGANIC	COMPLETE	6/30/93
CN	CYANIDE	INORGANIC	COMPLETE	6/30/93
HSL	HAZARDOUS SUBSTANCE LIST	METALS	COMPLETE	6/30/93
PCB	POLYCHLORINATED BIPHENYLS	ORGANIC	COMPLETE	6/30/93
PES	PESTICIDES	ORGANIC	COMPLETE	6/30/93
VOA	VOLATILE ORGANIC ANALYSIS	ORGANIC	COMPLETE	6/30/93

US EPA HOUSTON BRANCH

SAMPLE #:	3TFADW27-01	DATE	
SOURCE:	DIXIE (TEI) PETRO-CHEMICAL	RECEIVED:	26-May-93
TYPE:	AQUEOUS	DATE	
ANALYSTS:	RC, LC, JL	REPORTED:	30-Jun-93

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	UNITS
ALUMINUM	ND	100	UG/L
ANTIMONY	ND	60	UG/L
ARSENIC	ND	5.8	UG/L
BARIUM	27	10	UG/L
BERYLLIUM	ND	5	UG/L
CADMIUM	ND	5	UG/L
CALCIUM	24800	150	UG/L
CHROMIUM	ND	10	UG/L
COBALT	ND	20	UG/L
COPPER	ND	20	UG/L
IRON	320	25	UG/L
LEAD	ND	3.3	UG/L
MAGNESIUM	12000	150	UG/L
MANGANESE	10	5	UG/L
MERCURY	ND	0.2	UG/L
NICKEL	ND	20	UG/L
POTASSIUM	10600	1000	UG/L
SELENIUM	5.8	2.9	UG/L
SILVER	ND	10	UG/L
SODIUM	122000	500	UG/L
THALLIUM	ND	5.0	UG/L
VANADIUM	ND	30	UG/L
ZINC	99	20	UG/L
CYANIDE	ND	0.02	MG/L

ND: LESS THAN DETECTION LIMIT

 Attachment: 1

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3TFADW27-01 DATE REPORTED: 14-Jun-93

ANALYST: Richard McMillin SAMPLE TYPE: water

VOLATILE COMPOUNDS BY METHOD 624 units: ug/L

CAS#	Compound Name	Results*	Det Limits
67-64-1	acetone	ND	5
107-02-8	acrolein	ND	100
107-13-1	acrylonitrile	ND	100
71-43-2	benzene	ND	2
75-27-4	bromodichloromethane	ND	2
75-25-2	bromoform	ND	2
74-83-9	bromomethane	ND	5
78-93-3	2-butanone	ND	5
75-15-0	carbon disulfide	ND	5
56-23-5	carbon tetrachloride	ND	2
108-90-7	chlorobenzene	ND	2
75-00-3	chloroethane	ND	5
67-66-3	chloroform	ND	2
74-87-3	chloromethane	ND	5
124-48-1	dibromochloromethane	ND	2
75-34-3	1,1-dichloroethane	ND	2
107-06-2	1,2-dichloroethane	ND	2
75-35-4	1,1-dichloroethene	ND	2
156-59-2	cis-1,2-dichloroethene	ND	2
156-60-5	trans-1,2-dichloroethene	ND	2
78-87-5	1,2-dichloropropane	ND	2
10061-01-5	cis-1,3-dichloropropene	ND	2
10061-02-6	trans-1,3-dichloropropene	ND	2
100-41-4	ethylbenzene	ND	5
519-78-6	2-hexanone	ND	5
75-09-2	methylene chloride	ND	5
108-10-1	4-methyl-2-pentanone	ND	5
100-42-5	styrene	ND	5
79-34-5	1,1,2,2-tetrachloroethane	ND	2
127-18-4	tetrachloroethene	ND	2
108-88-3	toluene	ND	5
71-55-6	1,1,1-trichloroethane	ND	2
79-00-5	1,1,2-trichloroethane	ND	2
79-01-6	trichloroethene	ND	2
75-01-4	vinyl chloride	ND	5
108-38-3	m- and/or (CAS# 106-42-3)p-xylene	ND	5
95-47-6	o-xylene	ND	5

(*) ND = Not detected above the listed detection limit.

 Attachment: 1

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3TFADW27-01 DATE REPORTED: 14-Jun-93

ANALYST: Richard McMillin SAMPLE TYPE: water

TENTATIVELY IDENTIFIED VOLATILE COMPOUNDS BY METHOD 624

(min) RT	CAS#	COMPOUND NAME *	(ug/L) ** EST. CONC.
		No VOA TIC's detected in this sample.	

* ANALYSTS NOTE - THE COMPOUNDS LISTED ARE TENTATIVELY IDENTIFIED BY THE BEST MATCH WITH THE NIH/EPA/WILEY MASS SPECTRAL DATA BASE OR BY MANUAL INTERPRETATION. STANDARDS WERE NOT AVAILABLE FOR CONFIRMATION OR QUANTITATION.

**Estimated concentration is based on a RF of 1.0 to internal standard

Attachment: 1

ORGANIC ANALYSIS DATA

6E-HL Sample NO: 3TFADW27-01

Date Reported: 22-Jun-93

Analyst: M. HUMPHREY

Sample Type: WATER

SEMI-VOLATILE COMPOUNDS BY METHOD 625

units: ug/L

Compound Name	Results*	Det Limits	Compound Name	Results*	Det Limits
Acenaphthene	ND	2	2,4-Dinitrophenol	ND	30
Acenaphthylene	ND	2	2,4-Dinitrotoluene	ND	6
Anthracene	ND	2	2,6-Dinitrotoluene	ND	6
Benzidine	ND	20	4,6-Dinitro-2-Methylphenol	ND	20
Benzoic Acid	ND	10	Di-n-Butylphthalate	ND	2
Benzo(a)Anthracene	ND	8	Di-n-Octyl Phthalate	ND	4
Benzo(a)Pyrene	ND	8	Fluoranthene	ND	2
Benzo(b)Fluoranthene	ND	8	Fluorene	ND	2
Benzo(g,h,i)Perylene	ND	8	Hexachlorobenzene	ND	2
Benzo(k)Fluoranthene	ND	8	Hexachlorobutadiene	ND	5
Benzyl Alcohol	ND	4	Hexachlorocyclopentadiene	ND	10
bis(2-Chloroethoxy)Methane	ND	2	Hexachloroethane	ND	3
bis(2-Chloroethyl) Ether	ND	2	Indeno(1,2,3-cd) Pyrene	ND	8
bis(2-chloroisopropyl)Ether	ND	2	Isophorone	ND	4
bis-(2-Ethylhexyl)Phthalate	ND	4	2-Methylnaphthalene	ND	2
4-Bromophenylphenyl Ether	ND	8	2-Methylphenol	ND	6
Butylbenzylphthalate	ND	4	4-Methylphenol	ND	6
Carbazole	ND	10	Naphthalene	ND	2
4-Chloroaniline	ND	4	2-Nitroaniline	ND	8
2-Chloronaphthalene	ND	2	3-Nitroaniline	ND	8
2-Chlorophenol	ND	4	4-Nitroaniline	ND	8
4-Chlorophenylphenyl Ether	ND	8	Nitrobenzene	ND	2
4-Chloro-3-Methylphenol	ND	8	2-Nitrophenol	ND	10
Chrysene	ND	8	4-Nitrophenol	ND	13
Dibenzofuran	ND	2	N-Nitrosodiphenylamine	ND	4
Dibenzo(a,h)Anthracene	ND	8	N-Nitroso-Di-n-Propylamine	ND	6
1,2-Dichlorobenzene	ND	3	Pentachlorophenol	ND	15
1,3-Dichlorobenzene	ND	3	Phenanthrene	ND	2
1,4-Dichlorobenzene	ND	3	Phenol	ND	4
3,3'-Dichlorobenzidine	ND	10	Pyrene	ND	2
2,4-Dichlorophenol	ND	6	1,2,4-Trichlorobenzene	ND	3
Diethylphthalate	ND	2	2,4,5-Trichlorophenol	ND	6
2,4-Dimethylphenol	ND	6	2,4,6-Trichlorophenol	ND	6
DimethylPhthalate	ND	2			

(*) ND = Not detected above the listed detection limit.

Analyst Notes: ___________

Attachment: 1

ORGANIC ANALYSIS DATA

6E-HL Sample NO:3TFADW27-01

Date Reported: 22-Jun-93

Analyst: M. HUMPHREY

Matrix: WATER

TENTATIVELY IDENTIFIED SEMI-VOLATILE COMPOUNDS BY METHOD 625

units: ug/L

RT (min)	CAS #	COMPOUND NAME (*)	Estimated Concentration (**)
		No ABN TIC's detected in this sample.	

(*) ANALYSTS NOTE: The compounds listed are tentatively identified by the best match with the NIH/EPA/Wiley mass spectral data base or by manual interpretation. Standards were not available for confirmation or quantitation.

(**) Estimated concentration is based on a Response Factor of 1.0 to the nearest internal standard.

PESTICIDE/PCB ANALYSIS

SEG-HL SAMPLE NO.:JTFADW07-01 DATE REPORTED: 6 /28/1995

SAMPLE TYPE: WATER

ANALYST: L.C.MINER,JR.

CAS#		UG/L (PPB)
319-84-6	alpha-BHC	ND DL=< 0.05
319-85-7	beta-BHC	ND DL=< 0.05
319-86-8	delta-BHC	ND DL=< 0.05
58-89-9	gamma-BHC (Lindane)	ND DL=< 0.05
76-44-8	Heptachlor	ND DL=< 0.05
309-00-2	Aldrin	ND DL=< 0.05
1024-57-3	Heptachlor epoxide	ND DL=< 0.05
959-98-8	Endosulfan I	ND DL=< 0.05
60-57-1	Dieldrin	ND DL=< 0.10
72-55-9	4,4'-DDE	ND DL=< 0.10
72-20-8	Endrin	ND DL=< 0.10
33213-65-9	Endosulfan II	ND DL=< 0.10
72-54-8	4,4'-DDD	ND DL=< 0.10
7421-93-4	Endrin aldehyde	ND DL=< 0.10
53494-70-5	Endrin ketone	ND DL=< 0.10
1031-07-8	Endosulfan sulfate	ND DL=< 0.10
50-29-3	4,4'-DDT	ND DL=< 0.10
72-43-5	Methoxychlor	ND DL=< 0.50
5103-71-9	alpha-Chlordane	ND DL=< 0.05
5103-74-2	gamma-Chlordane	ND DL=< 0.05
8001-35-2	Toxaphene	ND DL=< 5.00
12674-11-2	Aroclor-1016	ND DL=< 1.00
11104-28-2	Aroclor-1221	ND DL=< 2.00
11141-16-5	Aroclor-1232	ND DL=< 1.00
53469-21-9	Aroclor-1242	ND DL=< 1.00
12672-29-6	Aroclor-1248	ND DL=< 1.00
11097-69-1	Aroclor-1254	ND DL=< 1.00
11096-82-5	Aroclor-1260	ND DL=< 1.00

ND DL = NOT DETECTED, DETECTION LIMIT

June 24, 1993

U.S. Environmental Protection Agency

Houston Branch Management System

Report for Sample Number 3TFADW2702

Source: DIXIE (TEI) PETRO-CHEMICAL

Site Description: STA # DW-19

Date/Time Received: 5/26/93 10:25

Date/Time Collected: 5/25/93 16:00

Sample Type: DW

Date Completed: 6/30/93

Comments:

Parameter	Description	Section	Status	Report Date
ABN	ACID/BASE NEUTRALS	ORGANIC	COMPLETE	6/30/93
CN	CYANIDE	INORGANIC	COMPLETE	6/30/93
HSL	HAZARDOUS SUBSTANCE LIST	METALS	COMPLETE	6/30/93
PCB	POLYCHLORINATED BIPHENYLS	ORGANIC	COMPLETE	6/30/93
PES	PESTICIDES	ORGANIC	COMPLETE	6/30/93
VOA	VOLATILE ORGANIC ANALYSIS	ORGANIC	COMPLETE	6/30/93

US EPA HOUSTON BRANCH

SAMPLE #:	3TFADW27-02	DATE RECEIVED:	26-May-93
SOURCE:	DIXIE (TEI) PETRO-CHEMICAL		
TYPE:	AQUEOUS	DATE REPORTED:	30-Jun-93
ANALYSTS:	RC, LC, JL		

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	UNITS
ALUMINUM	ND	100	UG/L
ANTIMONY	ND	60	UG/L
ARSENIC	ND	5.8	UG/L
BARIUM	27	10	UG/L
BERYLLIUM	ND	5	UG/L
CADMIUM	ND	5	UG/L
CALCIUM	24900	150	UG/L
CHROMIUM	ND	10	UG/L
COBALT	ND	20	UG/L
COPPER	ND	20	UG/L
IRON	347	25	UG/L
LEAD	ND	3.3	UG/L
MAGNESIUM	12200	150	UG/L
MANGANESE	10	5	UG/L
MERCURY	ND	0.2	UG/L
NICKEL	ND	20	UG/L
POTASSIUM	10600	1000	UG/L
SELENIUM	ND	2.9	UG/L
SILVER	ND	10	UG/L
SODIUM	123000	500	UG/L
THALLIUM	ND	5.0	UG/L
VANADIUM	ND	30	UG/L
ZINC	108	20	UG/L
CYANIDE	ND	0.02	MG/L

ND: LESS THAN DETECTION LIMIT

 Attachment: 2

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3TFADW27-02 DATE REPORTED: 14-Jun-93

ANALYST: Richard McMillin SAMPLE TYPE: water

VOLATILE COMPOUNDS BY METHOD 624 units: ug/L

CAS#	Compound Name	Results*	Det Limits
67-64-1	acetone	ND	5
107-02-8	acrolein	ND	100
107-13-1	acrylonitrile	ND	100
71-43-2	benzene	ND	2
75-27-4	bromodichloromethane	ND	2
75-25-2	bromoform	ND	2
74-83-9	bromomethane	ND	5
78-93-3	2-butanone	ND	5
75-15-0	carbon disulfide	ND	5
56-23-5	carbon tetrachloride	ND	2
108-90-7	chlorobenzene	ND	2
75-00-3	chloroethane	ND	5
67-66-3	chloroform	ND	2
74-87-3	chloromethane	ND	5
124-48-1	dibromochloromethane	ND	2
75-34-3	1,1-dichloroethane	ND	2
107-06-2	1,2-dichloroethane	ND	2
75-35-4	1,1-dichloroethene	ND	2
156-59-2	cis-1,2-dichloroethene	ND	2
156-60-5	trans-1,2-dichloroethene	ND	2
78-87-5	1,2-dichloropropane	ND	2
10061-01-5	cis-1,3-dichloropropene	ND	2
10061-02-6	trans-1,3-dichloropropene	ND	2
100-41-4	ethylbenzene	ND	5
519-78-6	2-hexanone	ND	5
75-09-2	methylene chloride	ND	5
108-10-1	4-methyl-2-pentanone	ND	5
100-42-5	styrene	ND	5
79-34-5	1,1,2,2-tetrachloroethane	ND	2
127-18-4	tetrachloroethene	ND	2
108-88-3	toluene	ND	5
71-55-6	1,1,1-trichloroethane	ND	2
79-00-5	1,1,2-trichloroethane	ND	2
79-01-6	trichloroethene	ND	2
75-01-4	vinyl chloride	ND	5
108-38-3	m- and/or (CAS# 106-42-3)p-xylene	ND	5
95-47-6	o-xylene	ND	5

(*) ND = Not detected above the listed detection limit.

 Attachment: 2

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3TFADW27-02 DATE REPORTED: 14-Jun-93

ANALYST: Richard McMillin SAMPLE TYPE: water

TENTATIVELY IDENTIFIED VOLATILE COMPOUNDS BY METHOD 624

(min) RT	CAS#	COMPOUND NAME *	(ug/L) ** EST. CONC.
		No VOA TIC's detected in this sample.	

* ANALYSTS NOTE - THE COMPOUNDS LISTED ARE TENTATIVELY IDENTIFIED BY THE BEST MATCH WITH THE NIH/EPA/WILEY MASS SPECTRAL DATA BASE OR BY MANUAL INTERPRETATION. STANDARDS WERE NOT AVAILABLE FOR CONFIRMATION OR QUANTITATION.

**Estimated concentration is based on a RF of 1.0 to internal standard

Attachment: 2

ORGANIC ANALYSIS DATA

6E-HL Sample NO: 3TFADW27-02

Date Reported: 22-Jun-93

Analyst: M. HUMPHREY

Sample Type: WATER

SEMI-VOLATILE COMPOUNDS BY METHOD 625

units: ug/L

units: ug/L

Compound Name	Results*	Det Limits	Compound Name	Results*	Det Limits
Acenaphthene	ND	2	2,4-Dinitrophenol	ND	30
Acenaphthylene	ND	2	2,4-Dinitrotoluene	ND	6
Anthracene	ND	2	2,6-Dinitrotoluene	ND	6
Benzidine	ND	20	4,6-Dinitro-2-Methylphenol	ND	20
Benzoic Acid	ND	10	Di-n-Butylphthalate	ND	2
Benzo(a)Anthracene	ND	8	Di-n-Octyl Phthalate	ND	4
Benzo(a)Pyrene	ND	8	Fluoranthene	ND	2
Benzo(b)Fluoranthene	ND	8	Fluorene	ND	2
Benzo(g,h,i)Perylene	ND	8	Hexachlorobenzene	ND	2
Benzo(k)Fluoranthene	ND	8	Hexachlorobutadiene	ND	5
Benzyl Alcohol	ND	4	Hexachlorocyclopentadiene	ND	10
bis(2-Chloroethoxy)Methane	ND	2	Hexachloroethane	ND	3
bis(2-Chloroethyl) Ether	ND	2	Indeno(1,2,3-cd) Pyrene	ND	8
bis(2-chloroisopropyl)Ether	ND	2	Isophorone	ND	4
bis-(2-Ethylhexyl)Phthalate	ND	4	2-Methylnaphthalene	ND	2
4-Bromophenylphenyl Ether	ND	8	2-Methylphenol	ND	6
Butylbenzylphthalate	ND	4	4-Methylphenol	ND	6
Carbazole	ND	10	Naphthalene	ND	2
4-Chloroaniline	ND	4	2-Nitroaniline	ND	8
2-Chloronaphthalene	ND	2	3-Nitroaniline	ND	8
2-Chlorophenol	ND	4	4-Nitroaniline	ND	8
4-Chlorophenylphenyl Ether	ND	8	Nitrobenzene	ND	2
4-Chloro-3-Methylphenol	ND	8	2-Nitrophenol	ND	10
Chrysene	ND	8	4-Nitrophenol	ND	13
Dibenzofuran	ND	2	N-Nitrosodiphenylamine	ND	4
Dibenzo(a,h)Anthracene	ND	8	N-Nitroso-Di-n-Propylamine	ND	6
1,2-Dichlorobenzene	ND	3	Pentachlorophenol	ND	15
1,3-Dichlorobenzene	ND	3	Phenanthrene	ND	2
1,4-Dichlorobenzene	ND	3	Phenol	ND	4
3,3'-Dichlorobenzidine	ND	10	Pyrene	ND	2
2,4-Dichlorophenol	ND	6	1,2,4-Trichlorobenzene	ND	3
Diethylphthalate	ND	2	2,4,5-Trichlorophenol	ND	6
2,4-Dimethylphenol	ND	6	2,4,6-Trichlorophenol	ND	6
DimethylPhthalate	ND	2			

(*) ND = Not detected above the listed detection limit.

(*) ND = Not detected above the listed detection limit.

Analyst Notes: ___________

Attachment: 2

ORGANIC ANALYSIS DATA

6E-HL Sample NO:3TFADW27-02

Date Reported: 22-Jun-93

Analyst: M. HUMPHREY

Matrix: WATER

TENTATIVELY IDENTIFIED SEMI-VOLATILE COMPOUNDS BY METHOD 625

units: ug/L

RT (min)	CAS #	COMPOUND NAME (*)	Estimated Concentration (**)
		No ABN TIC's detected in this sample.	

(*) ANALYSTS NOTE: The compounds listed are tentatively identified by the best match with the NIH/EPA/Wiley mass spectral data base or by manual interpretation. Standards were not available for confirmation or quantitation.

(**) Estimated concentration is based on a Response Factor of 1.0 to the nearest internal standard.

Attachment 2

PESTICIDE/PCB ANALYSIS

ES-HL SAMPLE NO.:3TFADW27-02　　　　DATE REPORTED: 6 /23/1993

AMPLE TYPE: WATER

NALYST: L.C.MINER,JR.

CAS#		UG/L (PPB)
319-84-6	alpha-BHC ----------------------------	ND DL=< 0.05
319-85-7	beta-BHC -----------------------------	ND DL=< 0.05
319-86-8	delta-BHC ----------------------------	ND DL=< 0.05
58-89-9	gamma-BHC (Lindane) ------------------	ND DL=< 0.05
76-44-8	Heptachlor ---------------------------	ND DL=< 0.05
309-00-2	Aldrin -------------------------------	ND DL=< 0.05
1024-57-3	Heptachlor epoxide -------------------	ND DL=< 0.05
959-98-8	Endosulfan I -------------------------	ND DL=< 0.05
60-57-1	Dieldrin -----------------------------	ND DL=< 0.10
72-55-9	4,4'-DDE -----------------------------	ND DL=< 0.10
72-20-8	Endrin -------------------------------	ND DL=< 0.10
33213-65-9	Endosulfan II ------------------------	ND DL=< 0.10
72-54-8	4,4'-DDD -----------------------------	ND DL=< 0.10
7421-93-4	Endrin aldehyde ----------------------	ND DL=< 0.10
53494-70-5	Endrin ketone ------------------------	ND DL=< 0.10
1031-07-8	Endosulfan sulfate -------------------	ND DL=< 0.10
50-29-3	4,4'-DDT -----------------------------	ND DL=< 0.10
72-43-5	Methoxychlor -------------------------	ND DL=< 0.50
5103-71-9	alpha-Chlordane ----------------------	ND DL=< 0.05
5103-74-2	gamma-Chlordane ----------------------	ND DL=< 0.05
8001-35-2	Toxaphene ----------------------------	ND DL=< 5.00
12674-11-2	Aroclor-1016 -------------------------	ND DL=< 1.00
11104-28-2	Aroclor-1221 -------------------------	ND DL=< 2.00
11141-16-5	Aroclor-1232 -------------------------	ND DL=< 1.00
53469-21-9	Aroclor-1242 -------------------------	ND DL=< 1.00
12672-29-6	Aroclor-1248 -------------------------	ND DL=< 1.00
11097-69-1	Aroclor-1254 -------------------------	ND DL=< 1.00
11096-82-5	Aroclor-1260 -------------------------	ND DL=< 1.00

D DL = NOT DETECTED, DETECTION LIMIT

June 24, 1993

U.S. Environmental Protection Agency

Houston Branch Management System

Report for Sample Number 3TFADW2703

Source:	DIXIE (TEI) PETRO-CHEMICAL
Site Description:	STA # DW-20
Date/Time Received:	5/26/93 10:25
Date/Time Collected:	5/25/93 16:15
Sample Type:	DW
Date Completed:	6/30/93
Comments:	

Parameter	Description	Section	Status	Report Date
ABN	ACID/BASE NEUTRALS	ORGANIC	COMPLETE	6/30/93
CN	CYANIDE	INORGANIC	COMPLETE	6/30/93
HSL	HAZARDOUS SUBSTANCE LIST	METALS	COMPLETE	6/30/93
PCB	POLYCHLORINATED BIPHENYLS	ORGANIC	COMPLETE	6/30/93
PES	PESTICIDES	ORGANIC	COMPLETE	6/30/93
VOA	VOLATILE ORGANIC ANALYSIS	ORGANIC	COMPLETE	6/30/93

US EPA HOUSTON BRANCH

SAMPLE #:	3TFADW27-03	DATE RECEIVED:	26-May-93
SOURCE:	DIXIE (TEI) PETRO-CHEMICAL		
TYPE:	AQUEOUS	DATE REPORTED:	30-Jun-93
ANALYSTS:	RC, LC, JL		

PARAMETER	CONCENTRATION	DETECTION LIMIT <=	UNITS
ALUMINUM	135	100	UG/L
ANTIMONY	ND	60	UG/L
ARSENIC	ND	5.8	UG/L
BARIUM	79	10	UG/L
BERYLLIUM	ND	5	UG/L
CADMIUM	ND	5	UG/L
CALCIUM	461	150	UG/L
CHROMIUM	ND	10	UG/L
COBALT	ND	20	UG/L
COPPER	703	20	UG/L
IRON	4700	25	UG/L
LEAD	5.7	3.3	UG/L
MAGNESIUM	1020	150	UG/L
MANGANESE	40	5	UG/L
MERCURY	ND	0.2	UG/L
NICKEL	ND	20	UG/L
POTASSIUM	ND	1000	UG/L
SELENIUM	ND	2.9	UG/L
SILVER	ND	10	UG/L
SODIUM	6210	500	UG/L
THALLIUM	ND	5.0	UG/L
VANADIUM	ND	30	UG/L
ZINC	273	20	UG/L
CYANIDE	ND	0.02	MG/L

ND: LESS THAN DETECTION LIMIT

Attachment: 3

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3TFADW27-03

DATE REPORTED: 14-Jun-93

ANALYST: Richard McMillin

SAMPLE TYPE: water

VOLATILE COMPOUNDS BY METHOD 624 units: ug/L

CAS#	Compound Name	Results*	Det Limits
67-64-1	acetone	ND	5
107-02-8	acrolein	ND	100
107-13-1	acrylonitrile	ND	100
71-43-2	benzene	ND	2
75-27-4	bromodichloromethane	ND	2
75-25-2	bromoform	ND	2
74-83-9	bromomethane	ND	5
78-93-3	2-butanone	ND	5
75-15-0	carbon disulfide	ND	5
56-23-5	carbon tetrachloride	ND	2
108-90-7	chlorobenzene	ND	2
75-00-3	chloroethane	ND	5
67-66-3	chloroform	ND	2
74-87-3	chloromethane	ND	5
124-48-1	dibromochloromethane	ND	2
75-34-3	1,1-dichloroethane	ND	2
107-06-2	1,2-dichloroethane	ND	2
75-35-4	1,1-dichloroethene	ND	2
156-59-2	cis-1,2-dichloroethene	ND	2
156-60-5	trans-1,2-dichloroethene	ND	2
78-87-5	1,2-dichloropropane	ND	2
10061-01-5	cis-1,3-dichloropropene	ND	2
10061-02-6	trans-1,3-dichloropropene	ND	2
100-41-4	ethylbenzene	ND	5
519-78-6	2-hexanone	ND	5
75-09-2	methylene chloride	ND	5
108-10-1	4-methyl-2-pentanone	ND	5
100-42-5	styrene	ND	5
79-34-5	1,1,2,2-tetrachloroethane	ND	2
127-18-4	tetrachloroethene	ND	2
108-88-3	toluene	ND	5
71-55-6	1,1,1-trichloroethane	ND	2
79-00-5	1,1,2-trichloroethane	ND	2
79-01-6	trichloroethene	ND	2
75-01-4	vinyl chloride	ND	5
108-38-3	m- and/or (CAS# 106-42-3)p-xylene	ND	5
95-47-6	o-xylene	ND	5

(*) ND = Not detected above the listed detection limit.

 Attachment: 3

ORGANIC ANALYSIS DATA

6E-HL SAMPLE NO: 3TFADW27-03 DATE REPORTED: 14-Jun-93

ANALYST: Richard McMillin SAMPLE TYPE: water

TENTATIVELY IDENTIFIED VOLATILE COMPOUNDS BY METHOD 624

(min) RT	CAS#	COMPOUND NAME *	(ug/L) ** EST. CONC.
		No VOA TIC's detected in this sample.	

* ANALYSTS NOTE - THE COMPOUNDS LISTED ARE TENTATIVELY IDENTIFIED BY THE BEST MATCH WITH THE NIH/EPA/WILEY MASS SPECTRAL DATA BASE OR BY MANUAL INTERPRETATION. STANDARDS WERE NOT AVAILABLE FOR CONFIRMATION OR QUANTITATION.

**Estimated concentration is based on a RF of 1.0 to internal standard

Attachment: 3

ORGANIC ANALYSIS DATA

6E-HL Sample NO: 3TFADW27-03

Date Reported: 22-Jun-93

Analyst: M. HUMPHREY

Sample Type: WATER

SEMI-VOLATILE COMPOUNDS BY METHOD 625

units: ug/L

Compound Name	Results*	Det Limits	Compound Name	Results*	Det Limits
Acenaphthene	ND	2	2,4-Dinitrophenol	ND	30
Acenaphthylene	ND	2	2,4-Dinitrotoluene	ND	6
Anthracene	ND	2	2,6-Dinitrotoluene	ND	6
Benzidine	ND	20	4,6-Dinitro-2-Methylphenol	ND	20
Benzoic Acid	ND	10	Di-n-Butylphthalate	ND	2
Benzo(a)Anthracene	ND	8	Di-n-Octyl Phthalate	ND	4
Benzo(a)Pyrene	ND	8	Fluoranthene	ND	2
Benzo(b)Fluoranthene	ND	8	Fluorene	ND	2
Benzo(g,h,i)Perylene	ND	8	Hexachlorobenzene	ND	2
Benzo(k)Fluoranthene	ND	8	Hexachlorobutadiene	ND	5
Benzyl Alcohol	ND	4	Hexachlorocyclopentadiene	ND	10
bis(2-Chloroethoxy)Methane	ND	2	Hexachloroethane	ND	3
bis(2-Chloroethyl) Ether	ND	2	Indeno(1,2,3-cd) Pyrene	ND	8
bis(2-chloroisopropyl)Ether	ND	2	Isophorone	ND	4
bis-(2-Ethylhexyl)Phthalate	ND	4	2-Methylnaphthalene	ND	2
4-Bromophenylphenyl Ether	ND	8	2-Methylphenol	ND	6
Butylbenzylphthalate	ND	4	4-Methylphenol	ND	6
Carbazole	ND	10	Naphthalene	ND	2
4-Chloroaniline	ND	4	2-Nitroaniline	ND	8
2-Chloronaphthalene	ND	2	3-Nitroaniline	ND	8
2-Chlorophenol	ND	4	4-Nitroaniline	ND	8
4-Chlorophenylphenyl Ether	ND	8	Nitrobenzene	ND	2
4-Chloro-3-Methylphenol	ND	8	2-Nitrophenol	ND	10
Chrysene	ND	8	4-Nitrophenol	ND	13
Dibenzofuran	ND	2	N-Nitrosodiphenylamine	ND	4
Dibenzo(a,h)Anthracene	ND	8	N-Nitroso-Di-n-Propylamine	ND	6
1,2-Dichlorobenzene	ND	3	Pentachlorophenol	ND	15
1,3-Dichlorobenzene	ND	3	Phenanthrene	ND	2
1,4-Dichlorobenzene	ND	3	Phenol	ND	4
3,3'-Dichlorobenzidine	ND	10	Pyrene	ND	2
2,4-Dichlorophenol	ND	6	1,2,4-Trichlorobenzene	ND	3
Diethylphthalate	ND	2	2,4,5-Trichlorophenol	ND	6
2,4-Dimethylphenol	ND	6	2,4,6-Trichlorophenol	ND	6
DimethylPhthalate	ND	2			

(*) ND = Not detected above the listed detection limit.

Analyst Notes: ____________

Attachment: 3

ORGANIC ANALYSIS DATA

6E-HL Sample NO:3TFADW27-03

Date Reported: 22-Jun-93

Analyst: M. HUMPHREY

Matrix: WATER

TENTATIVELY IDENTIFIED SEMI-VOLATILE COMPOUNDS BY METHOD 625

units: ug/L

RT (min)	CAS #	COMPOUND NAME (*)	Estimated Concentration (**)
		No ABN TIC's detected in this sample.	

(*) ANALYSTS NOTE: The compounds listed are tentatively identified by the best match with the NIH/EPA/Wiley mass spectral data base or by manual interpretation. Standards were not available for confirmation or quantitation.

(**) Estimated concentration is based on a Response Factor of 1.0 to the nearest internal standard.

Attachment 3

PESTICIDE/PCB ANALYSIS

SEG-HL SAMPLE NO.:FTFADW27-03 DATE REPORTED: 6 /28/1995

SAMPLE TYPE: WATER

ANALYST: L.C.MINER,JR.

CAS#		UG/L (PPB)
319-84-6	alpha-BHC ----------------------------	ND DL=< 0.05
319-85-7	beta-BHC -----------------------------	ND DL=< 0.05
319-86-8	delta-BHC ----------------------------	ND DL=< 0.05
58-89-9	gamma-BHC (Lindane) ------------------	ND DL=< 0.05
76-44-8	Heptachlor ---------------------------	ND DL=< 0.05
309-00-2	Aldrin -------------------------------	ND DL=< 0.05
1024-57-3	Heptachlor epoxide -------------------	ND DL=< 0.05
959-98-8	Endosulfan I -------------------------	ND DL=< 0.05
60-57-1	Dieldrin -----------------------------	ND DL=< 0.10
72-55-9	4,4'-DDE -----------------------------	ND DL=< 0.10
72-20-8	Endrin -------------------------------	ND DL=< 0.10
33213-65-9	Endosulfan II ------------------------	ND DL=< 0.10
72-54-8	4,4'-DDD -----------------------------	ND DL=< 0.10
7421-93-4	Endrin aldehyde ----------------------	ND DL=< 0.10
53494-70-5	Endrin ketone ------------------------	ND DL=< 0.10
1031-07-8	Endosulfan sulfate -------------------	ND DL=< 0.10
50-29-3	4,4'-DDT -----------------------------	ND DL=< 0.10
72-43-5	Methoxychlor -------------------------	ND DL=< 0.50
5103-71-9	alpha-Chlordane ----------------------	ND DL=< 0.05
5103-74-2	gamma-Chlordane ----------------------	ND DL=< 0.05
8001-35-2	Toxaphene ----------------------------	ND DL=< 5.00
12674-11-2	Aroclor-1016 -------------------------	ND DL=< 1.00
11104-28-2	Aroclor-1221 -------------------------	ND DL=< 2.00
11141-16-5	Aroclor-1232 -------------------------	ND DL=< 1.00
53469-21-9	Aroclor-1242 -------------------------	ND DL=< 1.00
12672-29-6	Aroclor-1248 -------------------------	ND DL=< 1.00
11097-69-1	Aroclor-1254 -------------------------	ND DL=< 1.00
11096-82-5	Aroclor-1260 -------------------------	ND DL=< 1.00

ND DL = NOT DETECTED, DETECTION LIMIT

REFERENCES

REFERENCE 1

Wayne Penick, DPC Industries, Inc., Letter to Keith Westberry Fluor Daniel, Inc., Concerning Dixie (TEI) Petro-Chemical.

DPC INDUSTRIES, INC.
P.O. Box 24600
Houston, Texas 77229-4600
(713) 457-4888
FAX (713) 457-4807

RECEIVED
APR 1 4 1993

April 12, 1993

Mr. Keith Westberry
Fluor Daniel, Inc.
12790 Merit, Suite 200
Dallas, TX 75251

RE: DPC Industries, Inc., Site Inspection
Gum Springs Road, Longview, Texas

Dear Mr. Westberry:

I have included with this letter some of the information you requested regarding the property located on Gum Springs Road. DPC Industries, Inc. operated a solvent terminal and chemical distribution facility at this location from 1979 until 1986. The facility was relocated to another site following 1986. The Gum Springs site was purchased by Dixie Petro-Chem from TEI Petro-Chem in 1979. I was informed that TEI constructed the terminal in 1975. In 1989 Dixie Petro-Chem changed it's company name to DPC Industries, Inc. The following information is included with this letter.

1. Facility site map
2. USGS map showing site location
   Lat. 32 29' 20" Long. 94 42' 30"
3. List of bulk chemicals that were handled on-site.
4. Two hazardous waste manifests from on-stie shipments.

Please contact me regarding the time you would like to meet at the Gum Springs site on April 19th. I plan on arriving in Longview Sunday night. I can be reached at (713) 457-4821.

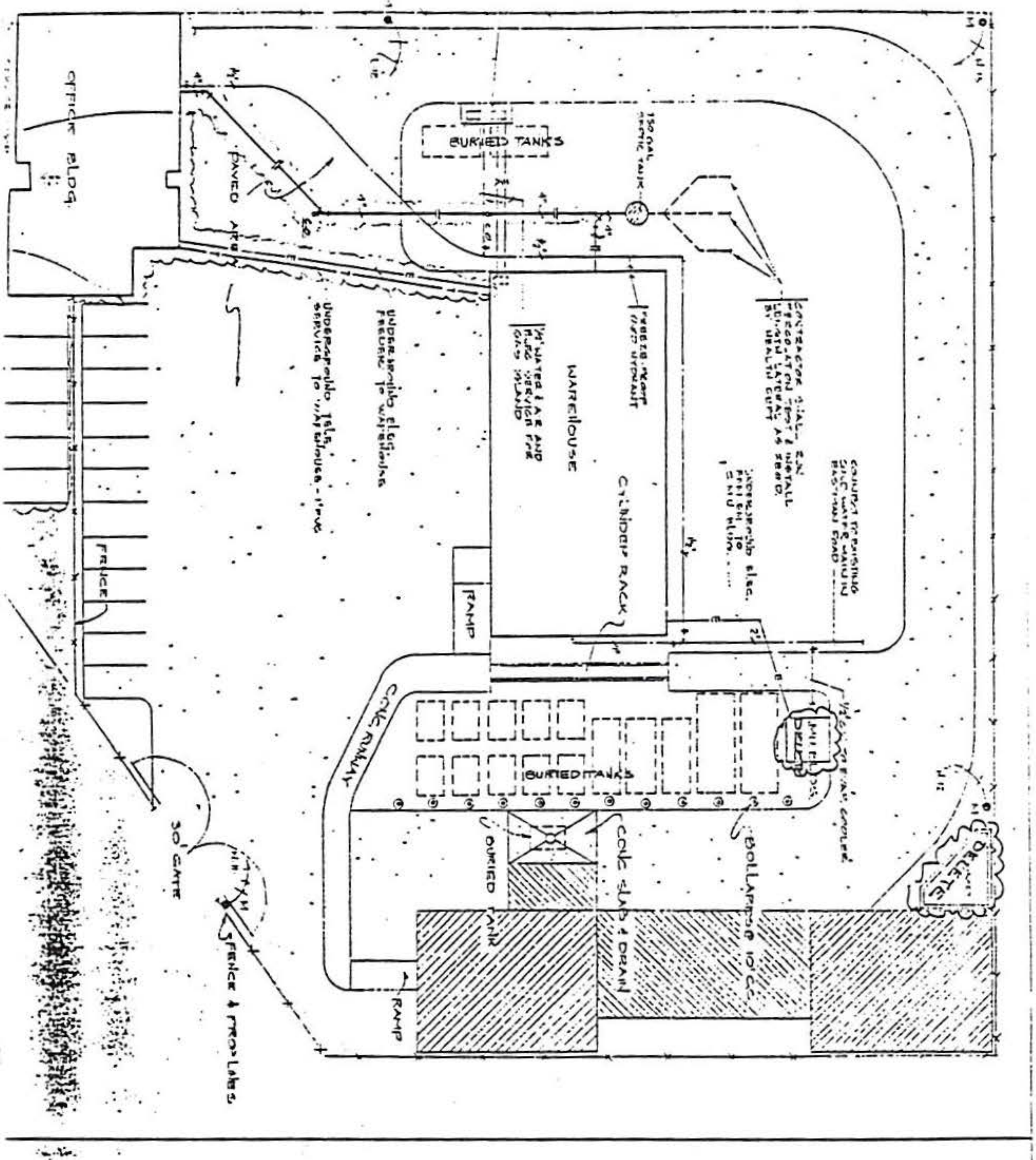
Sincerely,

DPC Industries, Inc.

Wayne Penick

Wayne L. Penick
Sr. Environmental Specialist

PW/WLP/LVGUM93



T.E.I. PETRO-CHEM, INC.

LONGVIEW, TEXAS

18 ... T.E.I. ... RAY THOMAS

PRODUCT	TANK CAPACITY	EST. ANNUAL THRU PUT
Acetone	8,000 gal.	800,000 lbs. [illegible]
Anti-Freeze	8,000 gal.	325,500 lbs. 1.45
Glycol Ether DB	1,000 gal.	45,000 lbs. 0.24
Glycol Ether EB	4,000 gal.	260,000 lbs. 1.47
Diethanolamine 85%	2,000 gal.	40,000 lbs. 0.23
Ethyl Acetate	4,000 gal.	185,000 lbs. 1.06
Ethyl Alcohol	4,000 gal.	264,000 lbs. 1.52
Ethylene Glycol	2,000 gal.	74,400 lbs. 0.43
Heavy Aromatic Naphtha	8,000 gal.	584,000 lbs. 3.37
Isopropyl Alcohol	8,000 gal.	975,000 lbs. 5.60
Lacquer Diluent	4,000 gal.	78,000 lbs. 0.45
Methanol	30,000 gal. (1)	*6,600,000 lbs. 37.48
Methyl Ethyl Ketone	8,000 gal.	540,000 lbs. 3.10
Methyl Isobutyl Ketone	2,000 gal.	130,000 lbs. 0.75
Methylene Chloride	4,000 gal.	135,000 lbs.. 0.77
Mineral Seal Oil	2,000 gal.	150,000 lbs. 0.84
Mineral Spirits	3000 ~~12,000~~ gal.	795,000 lbs. 4.56
Naphthol Spirits	2,000 gal.	105,000 lbs. 0.60
N. Butyl Acetate	2,000 gal.	45,000 lbs. 0.24
N. Butyl Alcohol	8,000 gal.	160,000 lbs. 0.92
N. Propyl Acetate	2,000 gal.	150,000 lbs. 0.86
N. Propyl Alcohol	4,000 gal.	80,000 lbs. 0.46
Perchlorethylene	2,000 gal.	110,000 lbs. 0.63
Solvent 100	2,000 gal.	146,000 lbs. 0.84
Solvent 150	6000 2,000 gal.	58,000 lbs. 0.33
140 Solvent	2,000 gal.	52,800 lbs. 0.30
Toluol	30,000 gal. (1)	*1,000,000 lbs. 5.74
1-1-1 Trichlorethane	4,000 gal.	550,000 lbs. 3.16
Triethylene Glycol	8,000 gal.	750,000 lbs. 4.30
VM&P	3000 ~~12,000~~ gal.	760,000 lbs. 4.34
Xylene	8,000 gal.	875,000 lbs. 5.02
Caustic Soda 50%	8,000 gal. (2)	600,000 lbs. 3.44

(1) Tank already in place.

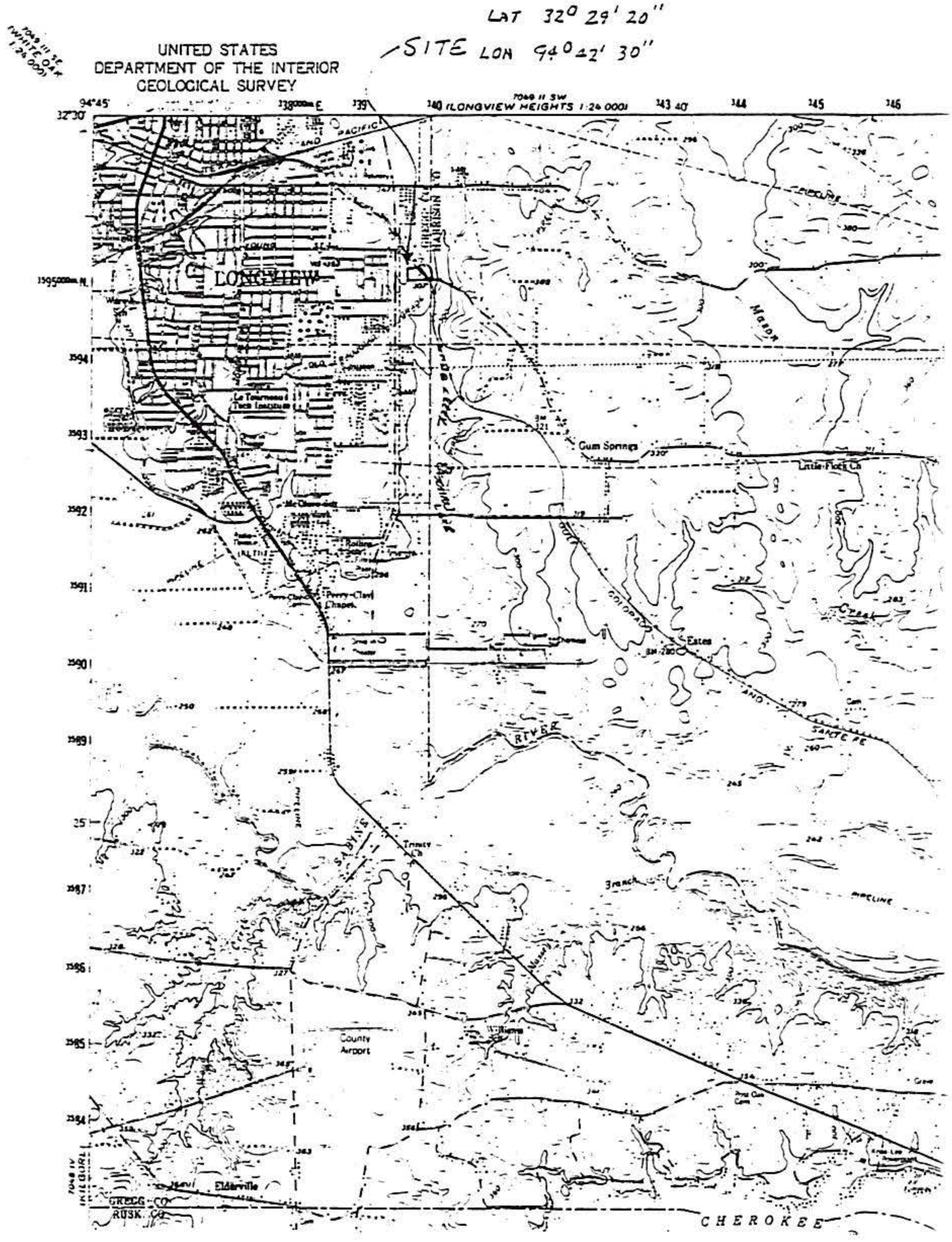
(2) Needs to be insulated.

TANK SIZE RECAP

30,000 Gal.	12,000 Gal.	8,000 Gal.	*4,000 Gal.
Methanol	Mineral Spirits	Acetone	EB
Toluene	VM&P	HAN	Ethyl Acetate
		IPA	Ethyl Alcohol
		MEK	Lacquer Diluent
		N. Butyl Alcohol	Methylene Chloride
		Xylene	N. Propyl Alcohol
		Caustic Soda 50% (1)	1-1-1 Trichlorethane
			N. Propyl Acetate
			DEA 85%
			Triethylene Glycol
			Solvent 100
			Anti-Freeze

LAT 32° 29' 20"

SITE LON 94° 42' 30"



TEXAS WATER COMMISSION
P.O. Box 13087, Capitol Station
Austin, Texas 78711-3087

32/61 G33

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2000-0404. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: TXD0079183 6 — Manifest Document No.: 7-6-3-81191614 — 2. Page 1 of

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Dixie Petro Chem, Inc
P.O. Box 8406
Longview 75608 ,
4. Generator's Phone ( ) 214/643-7362

5. Transporter 1 Company Name: Gibraltar Chemical Resources — 6. US EPA ID Number: TXD000742304

7. Transporter 2 Company Name — 8. US EPA ID Number

9. Designated Facility Name and Site Address
Gibraltar Chemical Resources
Hwy 155, 1 mi North of I-20
Winona, TX 75792
10. US EPA ID Number: TXD000742304

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. Waste Flammable NOS FLAMMABLE LIQUID, UN1993			2454	GAL
b.				
c.				
d.				

DOT-E-8408

RECEIVED APR 2 1987

J. Additional Descriptions for Materials Listed Above — K. Handling Codes for Wastes Listed Above

100% DRY WEIGHT

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment.

Printed/Typed Name	Signature	Month Day Year
CHRISTOPHER L. HAUPT	Christopher L. Haupt	03 27 87

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Claude Barkley Jr. / CHRISTOPHER L. HAUPT	Claude Barkley / Christopher L. Haupt	03 27 87

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
Nancy Blount	Nancy Blount	03 28 87

EPA Form 8700-22 (Rev. 4-85) Previous edition is obsolete. White-Original Pink-TSD Facility Yellow-Transporter Green-Generator's first copy
TWC 0311 (Rev. 05-01-85)

TEXAS WATER COMMISSION
P.O. Box 13087, Capitol Station
Austin, Texas 78711-3087

G 33

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2000-0404. Expires 7-31-86

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: TX0079983676 — Manifest Document No.: 38119
2. Page 1 of
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address:
Dixie Petro Chem, Inc.
P.O. Box 8406
Longview, TX 75607
4. Generator's Phone (214) 643-7362

A. State Manifest Document Number: 00181065
B. State Generator's ID: 32053

5. Transporter 1 Company Name: Gibraltar Chemical Resources
6. US EPA ID Number: TXD000747230014
C. State Transporter's ID
D. Transporter's Phone 214/877-3227

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address:
Gibraltar Chemical Resources
Hwy 155, 1 mi North of I20
Winona, TX 75792
10. US EPA ID Number: TXD000747230014
G. State Facility's ID
H. Facility's Phone 214/877-3227

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Flammable NOS FLAMMABLE LIQUID, UN1993	01	TT	5172	gal	[illegible]
b.					
c.					
d.					

DOT-E 8552

J. Additional Descriptions for Materials Listed Above
Dr. Wt. 7669
21.54 Dry

K. Handling Codes for Wastes Listed Above

MAR 30 1987
Petro-Chem

15. Special Handling Instructions and Additional Information

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
Unless I am a small quantity generator who has been exempted by statute or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of processing, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment.

Printed/Typed Name	Signature	Month Day Year
Gary Brandenburg	Gary Brandenburg	03 24 87

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Darrell Markham	Darrell Markham	03 24 87

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
ROBERT C. MANN	Robert C. Mann	3 24 87

EPA Form 8700-22 (Rev. 4-85) Previous edition is obsolete. White-Original Pink-TSD Facility Yellow-Transporter Green-Generator's first copy
TWC-0311 (Rev. 09-01-85)

REFERENCE 2

"Dixie (TEI) Petro-Chemical Lease Agreement".

LEASE AGREEMENT

PARTIES: This Lease ageeement made and entering into by and between Roy Wilson Transfer & Warehouse, Inc., hereinafter designated Lessor and IEI Petro-Chem, Inc., hereinafter designated Lessee, whereby Lessor leases unto the Lessee the following described property:

Approximately 2,000 sq. ft. of office and warehouse space located at 764 S. Eastman Road, Longview, Gregg County, Texas.

TERM: For the term of 24 months, to begin on the 1st day of August 1979, and ending on the 31st day of July, 1981.

RENTAL: Lessee agrees to pay to Lessor, or his designated agent, at such place as he shall designate in the County wherein the leased land lies, the sum of Nine Thousand ($9,000.00) Dollars, without demand, in monthly installments on the first day of each month during the term as follows:
It is also agreed the base monthly lease in the amount of $375.00 shall remain unchanged, except as adjusted for changes in taxes and insurance as provided. However, every two years the Lessor may, at his descretion, take the Federal Cost of Living Index published nearest the anniversary date of the lease for each of the two previous and the then current year, average the percentage increase over the index of August 1, 1979 and add as a "cost of living" bonus, a like percentage of the base lease, namely $375.00 monthly, to be paid monthly by Lessee until termination of lease or as amended by Lessor in a like manner at a later date. Lessor shall notify Lessee 30 days in advance of any forthcoming change due of the lease.
REPAIRS: Lessee acknowledges that he has fully inspected the demised premises, and on the basis of such inspection, Lessee hereby accepts the demised premises, and the buildings and improvements situated thereon, as suitable for the purposes for which same are leased, in their present condition, with such changes therein as may be caused by reasonable deterioration between the date hereof and the commencement date of the lease.

Lessor shall at all times at his sole cost and expense keep the roof, air conditioner, foundation, and exterior walls (excluding all windows and doors) of the buildings situated on the demised premises in good repair and condition, except that Lessee shall repair any damage caused by Lessee's negligence or default hereunder. In the event that the building situated upon the demised premises should become in need of repair required to be made by the Lessor hereunder, Lessee shall give immediate written notice thereof to Lessor and Lessor shall proceed promptly to make such repairs.

Lessee shall throughout the term of the Lease take good care of the demised premises including the buildings and other improvements located thereon, keep them free from waste or nuisance of any kind, and make all necessary repairs, except those expressly required to be made by Lessor. At the end or other termination of this Lease, Lessee shall deliver up the demised premises with all improvements located thereon in good repair and condition, reasonable wear and tear and damage by fire, tornado or other casualty only excepted.

Lessee shall also maintain all items of equipment at his expense except replacement of major equipment such as compressors, motors, etc. in which case replacement shall be borne by Lessor.
ASSIGNMENT: The Lessee shall not assign, sublet, mortgage or pledge this lease, nor let the whole or any part of the demised premises without the Lessor's written consent which shall not be unreasonably withheld (Lessor agreeing to the assignment or subletting to a corporation owning all voting shares of Lessee or subsidiary of such corporation or Lessee without such being a release of the original Lessee's liability hereunder), nor in any event permit the premises to be occupied for any purpose or business deemed illegal, disreputable or extra hazardous on account of fire, nor permit anything to be done in or about the demised premises which will in any way increase the reate of fire insurance on the building or on the property kept therein; and in the event that, by reason of acts of the Lessee, there shall be any increase in the rate of insurance on the building or on the contents thereof the Lessee agrees to pay such increase.

LAWS: Lessee agrees to comply with all laws, rules and orders of Federal, State and Municipal Governments and all of their departments applicable to the demised premises; and shall comply promptly with the requirements of the Board of Fire Underwriters.
INDEMNITY: Lessee agrees to indemnify and save harmless the Lessor of and from all fines, suits, claims, demands and actions of any kind by reason of any breach, violation, or non-performance of any condition hereof on the part of the Lessee; the Lessor shall not be liable for any injury or damage to person or property happening in or about the demised premises, and the Lessee agrees to indemnify and save harmless the Lessor from any and all damages or liability for anything arising from or out of the condition of permises or occupancy thereof by the Lessee.
ALTERATIONS: The Lessee shall not make any alterations, additions or improvements to the demised premises without the prior written consent of the Lessor. All fixtures (including floor coverings), alterations,additions and improvements put in at the expense of the Lessee, shall be the property of the Lessor and shall remain upon and be surrendered with the demised premises as a part thereof at the termination of this Lease.
ENTRY: The Lessor or his representatives shall have the right to enter the demised premises at all reasonable times to inspect and examine demised premises and to make alterations, changes, or repairs to the demised premises as are herein required or as Lessor may deem necessary for the preservation of the demised premises. Lessee shall not be entitled to any abatement or reduction of rent by reason thereof. During the last thirty (30) days of the term of this Lease or any extension thereof, the Lessor shall have the right to post "For Lease" and/or "For Sale" signs on the demised premises and during said period the Lessor or his representatives shall have the right to show the demised premises to prospective tenants or purchaser at all reasonalbe times.
SIGNS: Lessee shall not place any signs or objects on the roof or any part of the exterior of the building (except on the plate glass windows) nor place any signs, show cases, displays or fences on the sidewalks, parking lots, driveways or exterior of any building on the demised premises expcet as and where first approved in writing by Lessor which shall not be unreasonably withheld.
Lessee shall remove all signs at the termination of this Lease. Such installations and removals shall be made in such manner as to avoid injury, defacement or overloading of the building or other improvements.
CONDEMNATION: If the whole of the demised premises or such portion thereof as will make premises unuseable for the purposes herein leased, be condemned by any legally constituted authority for any public use or purpose, then in either of said events the term hereby granted shall cease from the time when possession thereof is taken by public authorities, and rental shall be accounted for as between Lessor and Lessee as of that date. Such termination, however, shall be without prejudice to the right of either Lessor or Lessee to recover compensation and damage caused by condemnation from the condemnor. It is further understood and agreed that neither the Lessee nor Lessor shall have any rights in any award made to the other by any condemnation authority.
NOTICE: Any demand to be made or notice to be given herrunder shall be made on, or given to the Lessee either personally or at the Lessor's option, by sending a copy of such demand or notice by mail addressed to the Lessee at the demised premises.
WAIVER: No waiver at any time of the right to terminate this Lease shall impair the right of the Lessor to insist upon such termination in the event of subsequent breach or default by Lessee, nor shall the acceptance of rent at any time constitute such waiver of default or waiver of damages, and in addition to any other remedies which the Lessor may have, the Lessor may apply for and obtain an injunction or use any other legal process to enforce the Lessor's rights.
MORTGAGES: This Lease is and shall always be subordinate to any mortgage or mortgages which now or shall at any time be placed upon the demised premises or any part thereof, and the Lessee agrees to execute and deliver any instrument, without cost, which may be deemed necessary to further effect the subordination of this Lease to any such mortgage or mortgages.

2-2

LIEN: All property of the Lessee now or hereafter placed in or upon the demised premises (except such part of the merchandise that is to be sold from time to time in the ordinary course of trade) is hereby subjected to a lien in favor of the Lessor and shall be and remain subject to such lien of the Lessor for the payment of all rents and other sums agreed to be paid by the Lessee herein. Said lien to be in addition to and cumulative of the Landlord's lien provided by law.

FIRE CLAUSE; In the event that the premises hereby demised, or the building of which the same is a part, shall be partially damaged by fire, the elements, civil disorder or other casualty, the Lessee shall give immediate notice thereof to the Lessor and the same shall be repaired at the expense of the Lessor without unreasonable delay. Lessee shall receive an abatement of rent proportionate to the damage to the demised premises; and in the event that the damage should be so extensive as to render the demised premises untenantable, or unfit for the purposos of Lessee, the rent shall cease until such time as the premises shall again be put into repair, but in the event of the building being damaged by fire or otherwise to such an extent as to render it necessary in the judgment of the Lessor not to rebuild the same (and whether or not the demised premises be affected), then, at the option of the Lessor and upon notice to Lessee and from thenceforth this lease shall cease and come to and end and the rent shall be apportioned and paid up to date of such damage. If Lessor elects to rebuild the premises and continue this Lease, Lessor shall notify Lessee of such intention within thirty (30) days of the date of the damage; otherwise, this Lease shall be deemed cancelled and of no further force or effect.

DEFAULT: In the event that the Lessee shall default in the prompt payment of rent when the same is due, or shall violate or omit to perform any of the provisions of this Lease herein contained, or in the event that the Lessee shall abondon the business or the premises or leave them vacant, Lessor may, if he so elects, send written notice of such default, violation or omission to the Lessee by mail or otherwise, at the demised premises and unless Lessee shall have completely cured or removed said default within ten (10) days after the sending of such notice by Lessor, Lessor may thereupon re-enter the demised premises, by summary proceedings or by force or otherwise without being liable for prosecution therefore, take possession of said premises and remove all persons and property therefrom, and may elect to either cancel this Lease or relet the premises as agent for the Lessee or otherwise and receive the rent therefor, applying the same first to the payment of such expenses as the Lessor may be put to in entering and letting and then to the payment of the rent payable under this Lease and the fulfillment of the Lessee's covenants hereunder, the balance (if any) to be paid to the Lessee who shall remain liable for any deficiency. On any sums due under the terms of this Lease placed in the hands of an attorney after default or collected through any judicial probate or bankruptcy proceedings, Lessee agrees to pay a reasonalbe attorney's fee, together with all court costs. Past due installments of rent shall bear interest at the rate of ten (10) per cent per annum until paid. In the event the Lessee shall continue to hold the demised premises, after demand therefor by Lessor, at the termination of this Lease, or for default or breach of this Lease, that the Lessor shall be entitled to institute and maintain a Forcible Entry and Detainer suit in the Justice Court and obtain a writ of possession for the demised premises.

BANKRUPTCY: In the event that the Lessee shall become bankrupt, voluntary or involuntary or shall make a voluntary assignment for the benefit of creditors or in the event that a receiver for the Lessee shall be appointed, then, at the option of the Lessor and upon ten (10) days notice to the Lessee or Lessee's representatives, of the exercise of such notice, this Lease shall cease and come to an end.

HOLDING OVER: It is agreed and understood that any holding over by Lessee of the hereby demised premises at the expiration of this Lease shall operate and be construed asa tenancy from month to month at a rental of one and one-half (1½) times the current monthly rental, and Lessee shall be liable to Lessor for all loss or damage on account of any holding over against Lessor's will after the termination of this Lease whether such loss or damage may be contemplated at this time or not.

SEVERABILITY: In the event of litigation on this instrument and should one or more clauses be found invalid all other provisions of the lease are to stand as written.

TAXES: Lessor agrees to pay before they become delinquent all real property taxes and assessments lawfully levied or assessed against the demised premises or any part thereof, provided, however, Lessor may at his sole expense dispute and contest same and in such case, such disputed item need not be paid until finally adjudged to be valid. If after one year from the commencement date of this lease, the real estate taxes on the demised premises are increased by any taxing authority at any time during the remaining portion of the primary term or any renewal or extension thereof, Lessee agrees to pay to Lessor upon demand and as additional rental, an amount monthly equal to 1/12 of said increase. Lessee shall pay all taxes levied against personal property, trade fixtures and inventory placed by Lessee in, or or about the demised premises.

INSURANCE: Any escalation in the cost of insurance, Lessee agrees to pay to Lessor upon demand, and as additional rental, an amount monthly equal to 1/12 of said increase.

BINDING UPON PARTIES: The Covenants and agreements herein contained shall inure to the benefit of and be binding upon the parties hereto, their respective heirs, legal representatives, successors and assigns.

UTILITIES: Lessor agrees to provide, at his sole expense, water, sewer, electricity, and gas service connections into the demised premises; but Lessee shall pay all utility connection charges including meters, if any, and all charges incurred for any utility services used on the demised premises, and shall furnish all electric light bulbs and tubes.

OPTIONS: Lessor grants Lessee three (3) options to renew this lease for a period of two (2) years for each of said three option periods after the expiration of the term of this lease at a rental of $375.00 per month, the other terms, covenants and conditions of the renewal lease to be the same as those herein. To exercise the first 2 year option, Lessee must give Lessor written notice of its intention to do so at lease ninety(90) days before the initial term expires. Lessee shall herein give notice to Lessor in writing delivered or mailed by certified mail, return receipt requested. In the event Lessee exercised its option as aforesaid and renews this lease for an additional period of years after expiration of the initial term of 2 years of this lease, Lessee may exercise its second option to renew this lease for a second period of 2 years after expiration of the first renewal term of 2 years, by again giving written notice as aforesaid to Lessor at lease 90 days before the first option period expires. In order to exercise the third 2 year option period, Lessee shall give notice within the same time limit and in the same manner as used to exercise the previous options available to Lessee.

This lease contains the entire agreement between the parties hereto, and no representations, inducements, promises or agreements, oral or otherwise, between the parties not embodied herein shall be of any force or effect. Executed in duplicated this the 1st day of August, 1979.

Roy Wilson Transfer & Warehouse, Inc.
(formerly LAW Moving and Storage, Inc.)

TEI [illegible]

2-4

THE STATE OF TEXAS

COUNTY OF Gregg

BEFORE ME, the undersigned a Notary Public in and for said County and State, on this day personally appeared Chat C. Blackmon Jr. known to me to be the person and officer whose name is subscribed to the foregoing instrument and acknowledged to me that the same was the act of the said corporation and that he executed the same as the act of such corporation for the purposes and consideration therein expressed, and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the 3rd day of August, 1979.

Laura Shirey
Notary Public in and for
Gregg County, Texas

THE STATE OF TEXAS

COUNTY OF Gregg

BEFORE ME, the undersigned a Notary Public in and for said County and State, on this day personally appeared W. Greg Allard known to me to be the person and officer whose name is subscribed to the foregoing instrument and acknowledged to me that the same was the act of the said corporation and that he executed the same as the act of such corporation for the purposes and consideration therein expressed and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the 3rd day of August, 1979.

Laura Shirey
Notary Public in and for
Gregg County, Texas

2.

STATE OF TEXAS §

COUNTY OF GREGG §

LEASE AGREEMENT

This Lease Agreement is made and entered into on this 30th day of ~~August~~ July, 1979, at Longview, Gregg County, Texas, by and between Clint C. Blackman, Jr. (hereinafter referred to as "Lessor") and T.E.I. Petro-Chem, Inc., a Texas corporation (hereinafter referred to as "Lessee") and is as follows:

W I T N E S S E T H:

That Lessor does hereby let, lease and demise unto Lessee that certain property located in Longview, Gregg County, Texas and any and all buildings or other improvements situated thereon, which property is more fully described upon Exhibit "A", attached hereto and incorporated herein for all purposes. Said property and premises, along with the right of ingress and egress, are leased by Lessor to Lessee in consideration of the mutual covenants, agreements, terms and conditions herein agreed to by and between Lessor and Lessee, to-wit:

1.

Term. The term of this lease shall be for a period of twenty-five (25) years, beginning on the ~~30th~~ 1st day of ~~August~~ August, 1979, and expiring at midnight on the 31st day of ~~August~~ July, 2005. Upon the expiration of said period, this Lease may be renewed and extended by the mutual consent of Lessor and Lessee upon whatever terms or conditions may be agreed in writing.

2.

Rental. During the primary term and any extension or renewal hereof, Lessee agrees and binds itself to pay monthly rental installments at such place as Lessor may designate on or before the first day of each calendar month an amount of money equal to $4,501.70, the minimum monthly rental, except as hereinafter adjusted pursuant to Paragraph 19 hereof.

3.

Use. The leased premises shall be used by Lessee for any and all purposes associated with the business of conducting a

2-6

chemical storage, distribution and sales facility in a manner consistent with sound business policy in the chemical sales business.

4.

Right to Sub-Lease. The premises covered by this agreement may not be subleased by Lessee without the prior written consent and approval of Lessor, which shall not be unreasonably withheld (Lessor agreeing to the assignment or subletting to a corporation owning all voting shares of Lessee or subsidiary of such corporation or Lessee without such being a release of the original Lessee's liability hereunder).

5.

Fixtures. Lessee shall have the right to install and maintain in and on the demised premises during the term of this Lease fixtures, equipment and other items of personal property as are necessary to the conduct of the chemical sales business, all of which shall remain the property of Lessee, to be removed by the Lessee at the expiration or earlier termination of this Lease. Nothing herein shall be construed as allowing the Lessee to remove such items as shall become affixed to the building of the Lessor, or the removal of such items which would cause unsightly damage to the walls of Lessor's buildings or other improvements upon the leased premises.

6.

Repairs. Lessee agrees to accept possession of the leased premises, and all personal property and equipment therein, in its present condition. It is understood and agreed that Lessee and/or its agents have examined the property leased herein and that no warranties, including warranty of fitness for a particular purpose, have been made with regard thereto. Lessor agrees to maintain in good repair at Lessor's cost the roof, outer walls and structural portions of the leased premises during the term of this lease. Lessor assumes no other duty or obligation for repair or maintenance of the premises. Lessee shall, at its sole cost and expense, at all times during the term of this lease or any extension hereof as provided for above, unless otherwise agreed to in writing, maintain and keep all other portions of the leased premises in good repair, order and condition, which shall include but not be limited to gas or electrical facilities, air conditioning, heating, plumbing, glass, painting and sewage. Lessee agrees to surrender the leased premises at the expiration or earlier termination of this lease in as good condition as at the commencement of the term of this lease, ordinary wear and tear and usual depreciation excepted.

7.

Alterations. Lessee shall have the right to make any alterations, additions, changes or improvements on the leased premises, at Lessee's cost, during the term of this lease or any extension hereof; provided that such alterations, additions changes or improvements do not structurally weaken the building or improvements located upon the demised premises described above.

8.

Taxes. Lessee shall be responsible for and timely pay all ad valorem taxes assessed or levied upon the property and improvements leased herein. Lessee shall further pay all taxes of whatever nature assessed on the personal property and equipment located in or upon the demised premises owned by Lessee.

9.

Utilities. During Lessee's occupancy or use of the leased premises, or any part thereof, Lessee shall promptly pay or cause to be paid when same shall become due and payable, all charges for electricity, water, gas, sewage or trash removal or disposal, used, rendered, supplied or consumed in, on, from or in connection with the leased premises or any part thereof. Any utility services which may be required by Lessee in addition to the quality or quantity thereof available as of the date of execution hereof shall be acquired and paid for by Lessee.

10.

Insurance. Lessor shall not be responsible for the procurement or the payment of any insurance upon the personal property and equipment that may be placed on or used in connection with the business to be conducted by the Lessee upon the leased premises.

11.

Fire Clause. In the event the leased premises should be damaged by fire, flood, windstorm, earthquake or any other casualty during the continuance of this lease to such an extent that it cannot be restored to as good a condition as it was prior to such damage within sixty days thereafter, either Lessor or Lessee shall have the right to cancel and terminate this Lease.

12.

Liability for Loss. As a part of the consideration for this lease, it is understood and agreed that all property of every kind which may be in or on the leased premises during the primary term or any extension or renewal hereof, shall be at the sole risk of Lessee or those claiming under it, and Lessor shall not be liable to Lessee or any other person, firm or entity of whatever nature for any injury, loss, death or damage to any person or property in or upon the leased premises. Lessee hereby covenants and agrees to assume all liability and indemnify and hold Lessor harmless of, from and against any claim, demand, action, damage, cost, expense and attorneys' fee in connection with loss of life, personal injury or damage to property arising from or out of any occurrence in or upon the leased premises or to the surrounding area of the premises used or leased by Lessee, or its employees, patrons and invitees, excluding only any injury, loss or damage due to the actual negligence of Lessor.

13.

Breach of Covenants. In the event of the failure of the Lessee to pay Lessor any rental or any sum due Lessor hereunder within ten days after same shall become due, or in the event of default by Lessee in the prompt, proper and complete performance of any provision hereof, or in the event Lessee shall abandon the leased premises, or if Lessee shall be adjudicated insolvent or bankrupt, or should Lessee make a general assignment for the benefit of creditors, or should Lessee's leasehold interest be taken under execution or other process of law, Lessor, without further notice or demand, may immediately enter the leased premises or any part thereof and repossess the same and expel Lessee or any person claiming by, through or under Lessee, and remove all effects and property at the cost and risk and for the account of Lessee. In no event shall the cancellation, expiration or other termination of this lease result in Lessor's being liable or guilty for any damages which may arise as a consequence of such cancellation, expiration or other termination. Lessee agrees to indemnify and hold Lessor harmless from any damages or liability which may arise in such event.

14.

Amendment. No amendments, modifications or alterations of the terms hereof shall be binding unless the same shall be in writing, dated subsequent to the date hereof and duly executed by the parties hereto.

15.

Waiver of Default. No waiver by the parties hereto of default or breach of any term, condition or convenant of this lease agreement shall be deemed to be a waiver of any other breach of the same, or any other term, covenant or condition contained herein.

16.

Rules of Public Authorities. Lessee agrees to comply with the rules, regulations, orders, laws, statutes and ordinances of the duly constituted public authorities covering the use and occupancy of the leased premises and the surrounding premises of Lessor during the primary term or any renewal or extension of this Lease.

17.

Venue. All actions brought in connection with this agreement shall be maintained in Gregg County, Texas. All sums of money due hereunder, whether rentals or damages, shall be payable pursuant to the directions of Lessor.

18.

Security Interest. As further security for the prompt payment of the rentals to be paid hereunder, Lessee has this date executed and delivered unto Lessor a Security Agreement and Financing Statement covering all of the items of personalty owned by Lessee with such property being identified or referred to in such Security Agreement and Financing Statement, to which reference is made for all purposes. In the event of required to be determined as provided in this paragraph. Lessor shall, within a reasonable time after obtaining the appropriate data necessary for computing such increase, give the Lessee the amount of any increase so determined, and the Lessor's computation thereof shall be conclusive and binding but shall not preclude any adjustment which may be required in the event of a published amendment of the Index figures upon which the computation was based unless the Lessee shall, within sixty days after giving of such notice, notify the Lessor of any claimed error therein. Any dispute between the parties as to any such computation shall be determined by arbitration.

The additional fixed rent as so determined, i.e. the aggregate of the minimum rental and the "increase" calculated in accordance with the above, shall be due and payable to the Lessor in equal monthly installments as set forth above commencing with the first month of the third calendar year of this lease, and in the event of any subsequent redetermination of such amount the adjustment thus indicated shall be made promptly between Lessor and Lessee.

20.

Paragraph Headings. The paragraph headings in this lease are intended for convenience only and should not be taken into consideration in any construction or interpretation of this Lease or any of its provisions.

21.

Successors. This agreement shall bind and inure to the parties hereto, their respective successors and assigns.

EXECUTED this 30th day of ~~August~~ July, 1979.

Clint C. Blackman, Jr.
LESSOR

T.E.I. PETRO-CHEM, INC.

Attest:

BY
LESSEE

2-12

STATE OF TEXAS

COUNTY OF GREGG

BEFORE ME, the undersigned, a Notary Public in and for said County and State, on this day personally appeared CLINT C. BLACKMAN, JR., known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed same for the purposes and consideration expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this 3rd day of August, 1979.

My Commission Expires:

10/81

Laurie Shirey
Notary Public, Gregg County, Texas

STATE OF TEXAS

COUNTY OF GREGG

BEFORE ME, the undersigned, a Notary Public in and for said County and State, on this day personally appeared Clint C. Blackman JR., known to me to be the person and officer whose name is subscribed to the foregoing instrument, and acknowledged to me that the same was the act of T.E.I. PETRO-CHEM, INC., a Texas corporation, and that he executed same for the purposes and consideration therein expressed, and in the capacity stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this 3rd day of August, 1979.

My Commission Expires:

10/81

Laurie Shirey
Notary Public, Gregg County, Texas

EXHIBIT "A"

Being 4.02 acres of land located in the H. W. Morvell A-156 and F. W. Sanders A-188 Surveys, Gregg County, Texas, said 4.02 acres being a part of a 5.29 acre tract described in deed of record in Vol. 969, Pg. 474, Deed Records, Gregg County, Texas, and also a part of a 5.24 acre tract described in deed of record in Vol. 1036, Pg. 15, Deed Records, Gregg County, Texas, said 4.02 acre being more particularly described as follows:

BEGINNING at a 5/8" iron rod in the W. ROW line of Gum Springs Road, said Beginning point being the SE corner of said 5.24 acre tract;

THENCE West 453.7 feet along the SBL of said 5.24 acre tract to a 3/8" iron rod for corner;

THENCE N 0 deg. 14' E, 248.2 feet along a fence on the EBL of trailer park to a 1/2" iron pipe for corner;

THENCE West 116.6 feet along the NBL of said trailer park to a point in same for corner;

THENCE North 289.3 feet to a point for corner, same being the NW corner at tanks;

THENCE S 89 deg. 16' E, 192.8 feet to a point in the W. ROW line of Gum Springs Road for corner;

THENCE S 35 deg. 14' E, 64.7 feet and S 35 deg. 08' E, 589.6 feet along the W. ROW line of said Gum Springs Road to the Place of Beginning and containing 4.02 acres of land.

This Financing Statement is presented to a Filing Officer for filing pursuant to the Uniform Commercial Code.

1. Debtor(s) Name and Mailing Address: (Do not abbreviate)	2. Secured Party(ies) Name and Address:	3. For Filing Officer: (Date, Time, Number and Filing Office)
T.E.I. PETRO-CHEM, INC.	Clint C. Blackman, Jr., his successors or assigns P. O. Box 1548 Longview, Texas 75601	

4. This Financing Statement covers the following types (or items) of property. (WARNING If collateral is crops, fixtures, timber or minerals, read instructions on back.)

5. Name and Address of Assignee of Secured Party: [illegible]

Personal property, equipment, etc. as shown upon Exhibit "A", which is attached hereto and made a part hereof for all purposes. It is understood and agreed that the security interest created in Secured Party is subordinate and inferior to the lien and security interest presently or hereafter owned by the Longview National Bank, Longview, Texas.

Check only if applicable

☐ This Financing Statement is to be filed for record in the real estate records.

Number of additional sheets presented ______

☐ Products of collateral are also covered.

6. This Statement is signed by the Secured Party instead of the Debtor to perfect a security interest in collateral (Please check appropriate box)

☐ [illegible] state, or

☐ [illegible]

☐ [illegible]

☐ [illegible]

☐ [illegible]

T.E.I. PETRO-CHEM, INC.

By [signature] Signature(s) of Debtor(s)

Use whichever signature line is applicable

Clint C. Blackman, Jr.

By [signature] Signature(s) of Secured Party(ies)

(4) Debtor's Copy — Detach Before Mailing

STANDARD FORM — FORM UCC-1 (REV. 6-19-75) APPROVED BY SECRETARY OF STATE OF TEXAS

THE ODES COMPANY, DALLAS, TEXAS 75340

SECURITY AGREEMENT

(General)

Date: July 30 1979.

1. PARTIES
   (a) Debtor: P.G.I.-PETRO-CHEM, INC.

   No. & Street City County State

   (b) Secured Party: Clint C. Blackman, Jr., his successors or assigns

   P. O. Box 1518, Longview Gregg County Texas
   No. & Street City County State

2. AGREEMENT: Debtor grants to secured party a security interest in the collateral to secure the payment of the obligation.

3. OBLIGATION: (a) All past, present and future advances, of whatever type, by secured party to debtor, and extensions and renewals thereof; (b) All existing and future liabilities, of whatever type of debtor to secured party and including (but not limited to) liability for overdrafts and as endorser and surety; (c) All costs incurred by secured party to obtain, preserve, and enforce this security interest, collect the obligation, and maintain and preserve the collateral, and including (but not limited to) taxes, assessments, insurance premiums, repairs, reasonable attorney's fees and legal expenses, feed, rent, storage costs and expense of sale; (d) Interest on the above amounts, as agreed between the secured party and debtor, or if no such agreement, at the maximum rate permitted by law; and ~~[illegible]~~

~~NAME~~ ~~DATE~~ ~~AMOUNT~~

(e) the prompt payment of rentals due under Lease Agreement of even date by and between Debtor and Secured Party covering a 4.02 acre tract of land in the H. W. Norvell A-156 and F. W. Sanders A-188 Surveys, Gregg County, Texas.

4. COLLATERAL:
   1. The security interest is granted in the following collateral:
      (a) Description of collateral:

      Personal property, equipment, etc. as shown upon Exhibit "A", attached hereto and made a part hereof for all purposes.

It is understood and agreed that the security interest created in Secured Party is subordinate and inferior to the lien and security interest presently or hereafter owned by the Longview National Bank, Longview, Texas.

      (b) All substitutes and replacements for, accessions, attachments, and other additions to, and tools, parts and equipment used in connection with the above property; and the increase and unborn young of animals and poultry.

      (c) All property similar to the above hereafter acquired by debtor.

      (d) Collateral includes, without limitation, all money and property this day delivered to and deposited with secured party, and all money and property heretofore delivered or which shall hereafter be delivered to or come into the possession, custody or control of secured party in any manner or for any purpose whatever during the existence of this Security Agreement, and whether held in a general or special account, or deposited for safekeeping or otherwise.

   2. Classify goods under (one or more of) the following Uniform Commercial Code categories:

      X Consumer goods ___ Equipment (farm use) X Inventory

      X Equipment (business use) ___ Farm products

   3. ___ If this block is checked, this is a purchase money security interest, and debtor will use funds advanced to purchase the collateral, or secured party may disburse funds direct to the seller of the collateral, and to purchase insurance on the collateral.

   4. If any of the collateral is accounts or contract rights, give the location of the office where the records concerning them are kept (if other than debtor's address in Item 1 (a)).

   5. If this security agreement is to be filed as a financing statement, check the appropriate block if

      ___ Proceeds ___ Products

   are covered for financing statement purposes. Coverage of proceeds or products for financing statement purposes is not to be construed as giving debtor any additional rights with respect to the collateral, and debtor is not authorized to sell, lease, otherwise transfer, furnish under contracts of service, manufacture, process, or assemble the collateral except in accordance with the provisions on the back of this security agreement.

S M R & F FORM

2-16

5. [illegible]

1. [illegible] insure the collateral for such [illegible] in such [illegible] secured party directs, policies to be satisfactory to secured party; pay all costs necessary to obtain, preserve and enforce this security interest, collect the obligation, and preserve the collateral, and including (but not limited to) taxes, assessments, insurance premiums, repairs, reasonable attorneys' fees and legal expenses, feed, rent, storage costs, and expenses of sale; furnish secured party with any information on the collateral requested by secured party; allow secured party to inspect the collateral, and inspect and copy all records relating to the collateral and the obligation; sign any papers furnished by secured party which are necessary to obtain and maintain this security interest; assist secured party in complying with the Federal Assignment of Claims Act, where necessary to enable secured party to become an assignee under such Act; take necessary steps to preserve the liability of account debtors, obligors, and secondary parties whose obligations are part of the collateral; transfer possession of all instruments, documents and chattel paper which are part of the collateral to secured party immediately, or as to those hereafter acquired, immediately following acquisition; perfect a security interest (using a method satisfactory to secured party) in goods covered by chattel paper which is part of the collateral; notify secured party of any change occuring in or to the collateral, or in any fact or circumstance warranted or represented by debtor in this agreement or furnished to secured party, or if any event of default occurs.
2. Debtor will not (without secured party's consent): remove the collateral from the locations specified herein; allow the collateral to become an accession to other goods; sell, lease, otherwise transfer, manufacture, process, assemble or furnish under contracts of service, the collateral, except goods identified herein as inventory; allow the collateral to be affixed to real estate, except goods identified herein as fixtures.
3. Debtor warrants: no financing statement has been filed with respect to the collateral, other than relating to this security interest; debtor is absolute owner of the collateral, and it is not encumbered other than by this security interest (and the same will be true of collateral acquired hereafter when acquired); none of the collateral is affixed to real estate or an accession to other goods, nor will collateral acquired hereafter be affixed to real estate or an accession to other goods when acquired, unless debtor has furnished secured party the consents or disclaimers necessary to make this security interest valid against persons holding interests in the real estate or other goods; all account debtors and obligors, whose obligations are part of the collateral, are to the extent permitted by law prevented from asserting against secured party any claims or defenses they have against sellers.

6. RIGHTS OF SECURED PARTY

Secured party may, in its discretion, before or after default: terminate, on notice to debtor, debtor's authority to sell, lease, otherwise transfer, manufacture, process or assemble, or furnish under contracts of service, inventory collateral, or any other collateral as to which such permission has been given; require debtor to give possession or control of the collateral to secured party; indorse as debtor's agent any instrument or chattel paper in the collateral; notify account debtors and obligors on instruments to make payment direct to secured party; contact account debtors directly to verify information furnished by debtor; take control of proceeds and use cash proceeds to reduce any part of the obligation; take any action debtor is required to take or otherwise necessary to obtain, preserve and enforce this security interest, and maintain and preserve the collateral, without notice to debtor, and add costs of same to the obligation (but secured party is under no duty to take any such action); release collateral in its possession to debtor, temporarily or otherwise; require additional collateral; reject as unsatisfactory any property hereafter offered by debtor as collateral; set standards, from time to time, to govern what may be used as after-acquired collateral; designate, from time to time, a certain percent of the collateral as the loan value and require debtor to maintain the obligation at or below such figure; take control of funds generated by the collateral, such as dividends, interest, and proceeds or refunds from insurance, and use same to reduce any part of the obligation; vote any stock which is part of the collateral, and exercise all other rights which an owner of such stock may exercise; waive any of its rights hereunder without such waiver prohibiting the latter exercise of the same or similar rights; revoke any permission or waiver previously granted to debtor.

7. MISCELLANEOUS

The rights and privileges of secured party shall inure to its successors and assigns. All representations, warranties, and agreements of debtor are joint and several if debtor is more than one and shall bind debtor's personal representatives, heirs, successors and assigns. Definitions in the Uniform Commercial Code apply to words and phrases in this agreement; if Code definitions conflict, Article 9 definitions apply. Debtor waives presentment, demand, notice of dishonor, protest and extension of time without notice to any instruments and chattel paper in the collateral. Notice mailed to debtors address in Item 1 (a) or to debtor's most recent changed address on file with secured party, at least five (5) days prior to the related action (or, if the Uniform Commercial Code specifies a longer period, such longer period prior to the related action), shall be deemed reasonable.

8. DEFAULT

1. Any of the following is an event of default: failure of debtor to pay any note in the obligation in accordance with its terms, or any other liability in the obligations on demand or to perform any act or duty required by this agreement, falsity of any warranty or representation in this agreement when made; substantial change in any fact warranted or represented in this agreement; involvement of debtor in bankruptcy or insolvency proceedings; death, dissolution, or other termination of debtor's existence; merger or consolidation of debtor with another; substantial loss, theft, destruction, sale reduction in value, encumbrance of, damage to, or change in the collateral; modification of any contract, the rights to which are part of the collateral levy on, seizure or attachment of the collateral; judgment against debtor; filing any financing statement with regard to the collateral, other than relating to this security interest; secured party's belief that the prospect of payment of any part of the obligation, or the performance of any part of this agreement, is impaired.
2. When an event of default occurs, the entire obligation becomes immediately due and payable at secured party's option without notice to debtor, and secured party may proceed to enforce payment of same and exercise any and all of the rights and remedies available to a secured party under the Uniform Commercial Code as well as all other rights and remedies. When debtor is in default, debtor, upon demand by secured party, shall assemble the collateral and make it available to secured party at a place reasonably convenient to both parties. Debtor is entitled to any surplus and shall be liable to secured party for any deficiency, arising from the sale of collateral to secured party or third parties.

9. FIRST AND PRIOR LIEN

This security interest grants to secured party a first and prior lien to secure the payment of the obligations listed herein, and extensions and renewals thereof. If secured party disposes of the collateral following default, the proceeds of such disposition available to satisfy the indebtedness shall be applied first to the notes herein, and renewals and extensions thereof, in the order of execution, and thereafter to all remaining indebtedness secured hereby, in the order in which such remaining indebtedness was executed or contracted. For the purpose of this paragraph, an extended or renewed note will be considered executed on the date of the original note.

10. Each supplement or exhibit which is attached to this security agreement is incorporated herein and made a part hereof for all purposes.

SECURED PARTY:	DEBTOR:
Clint C. Blackman, Jr.	T.E.I. PETRO-CHEM, INC.
	BY

2-17

EXHIBIT "A"

23 - 4,000 gallon underground tanks;
2 - 6,000 gallon underground tanks;
3 - 8,000 gallon underground tanks;
2 - 16,000 gallon underground tanks;
4 - 12,000 gallon (3 compartments each) above ground tanks;
1 - 30,000 gallon tank;
15 - 20 EVP 17A Marlow Pumps, Serial Nos. 616290, 616292, 616287, 616289, 616284, 616291, 616285, 616288, 616283, 608824, 616286, 616282, 616281, 616280, and 616279;
2 - Gasboy Model 53-TP Pumps, Serial Nos. 357248 and 357245;
2 - Air Compressors, Serial Nos. 293178 and 776555;
3 - Blackmer Pumps, Serial Nos. 64349, A11B1Bo and 71980-T;
1 - Scale, Serial No. G560172;
2 - Meters, Serial Nos. 209015 and 204361;
All tank stands with plumbing and electrical associated therewith;
All bulk materials with a present laid in cost of approximately $200,000.00 and any any replacement or addition thereto;
All drummed and packaged materials with a present laid in cost of approximately $120,000.00 and any replacement or addition thereto;
All other plant and handling equipment on hand and in use as of July 31, 1979;
All office equipment and furniture on hand and in use as of July 31, 1979;
1 - 1957 Chevrolet Truck and Tank, Serial No. 4B595120363;
1 - 1973 Ford F-600, Serial No. F60DUQ60554;
1 - 1976 Ford F-750 and Bed, Serial No. F75FUA86796;
1 - 1976 Ford LTD, Serial No. 6P66H137897;
1 - 1977 Ford F-700, Serial No. F70EVX90947;
1 - Freuhauf Tank Trailer, Serial No. OHC185601;
1 - Clarklift C-300-Y400, Serial No. Y466-69-3975;
1 - 1977 Kenworth, Serial No. 250659J;
1 - 1978 Oldsmobile, Serial No. 3L69R8C127401;
1 - 1978 Oldsmobile, Serial No. 3L69R8C128013;
1 - 1978 Mercury Monarch, Serial No. 8W33F550748;
1 - Freuhauf Tank Trailer, Serial No. OMD260003;
1 - 1976 Peterbilt, Serial No. 80822N;
1 - 1979 International and Tank, Serial No. AA182JHB18482;
1 - 1979 International and Tank, Serial No. AA182JHB18486;
1 - 1979 Ford F-350 Pickup, Serial No. X35JKEE2713.
All pumps, meters, hoses and other equipment attached, stored or otherwise made a part of the above described trucks and automobiles.

THE SECURITY INTEREST COVERS AND INCLUDES ALL OF THE PERSONAL PROPERTY ASSETS OF THE DEBTOR INCLUDING NOT ONLY THE ONES ABOVE LISTED BUT ALSO THOSE HEREINAFTER ACQUIRED AND ANY REPLACEMENTS, SUBSTITUTIONS OR ADDITIONS TO THE ABOVE LISTED.

WARRANTY DEED WITH VENDOR'S LIEN

FROM: CLINT C. BLACKMAN, JR.

TO: DIXIE CHEMICAL COMPANY, INC.

KNOW ALL MEN BY THESE PRESENTS: That Clint C. Blackman, Jr. (hereinafter called "Grantor") of Longview, Gregg County, Texas, in consideration of the sum of Ten and No/100 ($10.00) Dollars and other good and valuable consideration to him paid and secured to be paid by Dixie Chemical Company, Inc., a Texas corporation (hereinafter sometimes called "Grantee") as follows:

Ten and No/100 ($10.00) Dollars and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and the further consideration of the execution and delivery by Grantee of its one certain promissory note of even date herewith in the principal sum of $380,000.00, payable to the order of Grantor at Longview, Gregg County, Texas, as therein provided, and bearing interest at the rate therein specified, providing for acceleration to maturity in the event of default and for attorneys' fees;

have GRANTED, SOLD and CONVEYED, and by these presents do GRANT, SELL and CONVEY unto the Grantee all that certain 4.02 acre tract of real property situated in the H. W. Norvell A-156 and F. W. Sanders A-188 Surveys, Gregg County, Texas, said 4.02 acres being more particularly described upon Exhibit "A" which is attached hereto and made a part hereof for all purposes.

TO HAVE AND TO HOLD the premises described upon Exhibit "A", together with all and singular the rights and appurtenances thereto in anywise belonging unto the said Dixie Chemical Company, Inc., its successors and assigns forever, including but not limited to the Lease Agreement between Grantor and T.E.I. Petro-Chem, Inc., and I do hereby bind myself, my heirs, executors, administrators and assigns to warrant and forever defend, all and singular, the said premises unto the said Dixie Chemical Company, Inc., its successors and assigns, against every person lawfully claiming or to claim the same or any part thereof.

But it is expressly agreed and stipulated that the vendor's lien (in addition to a Deed of Trust this date executed and delivered by Grantee to Jerry S. Harris, Trustee, covering the 4.02 acres conveyed hereby) together with the superior title to said property, is retained against the above described property, premises and improvements until the above described promissory note and all interest thereon, are fully paid according to its face and tenor, effect and reading, when this deed shall become absolute.

It is specifically understood and agreed that the vendor's lien and deed of trust above referred to securing the $380,000.00 promissory note (which is in the nature of a wrap-around note) are subordinate and inferior to those Deeds of Trust recorded in Vol. 513, Pg. 165 and Vol. 604, Pg. 262 of the Deed of Trust Records of Gregg County, Texas, to which reference is made for all purposes. The indebtedness secured by the last identified Deeds of Trust are not being assumed by Grantee, but it takes title hereunder subject thereto. Moreover, Grantee takes such property subject to the easements, restrictions, encumbrances and reservations of record and those apparent from a visual inspection of the property.

WITNESS my hand at Longview, Texas, this 3rd day of August, 1979.

Clint C. Blackman, Jr.

Clint C. Blackman, Jr.

STATE OF TEXAS

COUNTY OF GREGG

BEFORE ME, the undersigned, a Notary Public in and for said County and State, on this day personally appeared CLINT C. BLACKMAN, JR., known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this 3rd day of August, 1979.

My Commission Expires:

12-81

[illegible]

Notary Public, Gregg County, Texas

2-20

REFERENCE 3

Perrin, John K., Dixie (TEI) Petro-Chemical, "Closure of Hazardous Waste Management Facilities Report", prepared for the Texas Water Commission.

DIXIE PETRO-CHEM, INC.'S
LONGVIEW, TEXAS (GUM SPRINGS ROAD) FACILITY

CLOSURE OF
HAZARDOUS WASTE MANAGEMENT
FACILITIES

PRESENTED TO

TEXAS WATER COMMISSION
AUSTIN, TEXAS

PREPARED
MARCH 31, 1987

BY

JOHN K. PERRIN
SR. ENVIRONMENTAL SPECIALIST
DIXIE CHEMICAL COMPANY, INC.
10701 BAY AREA BLVD.
PASADENA, TEXAS 77507

(713) 474-3271 OR 474-2561

TABLE OF CONTENTS

1.0 Introduction

Dixie Chemical Company, Inc. (hereafter referred to as "Dixie") thru its wholly owned subsidary Dixie Petro-Chem, Inc. (hereafter referred to as "DPC") operates an industrial chemical distribution facility in Longview, Texas. In the past, DPC has collected various spent cleaning solutions and de minimus product losses in a 16,000 gallon above ground storage tank. This document describes the actions to be taken in removal, (i.e., closure) of the hazardous waste storage tank, in accordance with TAC 335.118 Subchapter E of the Industrial Solid Waste Management Regulations of the Texas Water Commission (hereafter referred to as "TWC").

2.0 Closure Concepts

The closure plan's objective is the removal of all hazardous wastes and the decontamination of the hazardous waste storage tank and ancillary equipment (i.e., dike wall, collection pad, sump, pump, and associated piping).

2.1 Tank Cleaning and Waste Removal

To facilitate tank cleaning, once all liquid waste have been removed, the man way will be removed to gain access to the inside of the tank. The tank will be steamed cleaned and washed. The resulting cleaning solutions will be transferred to a tank transport for offsite disposal. The tank will then be rinsed and a sample taken to verify decontamination. Should contaminant levels above the decontamination objectives be observed, the tank will again be rinsed and the rinsate tested until it meets those objectives.

2.2 Ancillary Equipment

The collection pad, pump, sump, and associated piping will be steam cleaned and washed. The resulting cleaning solutions will be transferred to a tank transport for offsite disposal. The ancillary equipment will then be rinsed and a sample taken to verify decontamination. Should contaminant levels above the decontamination objectives be observed, the equipment will again be rinsed and the rinsate tested until it meets those objectives.

Following waste removal and decontamination procedures the tank and ancillary equipment will be available for other service (i.e., sale, product service, salvage, etc.).

3.0 Waste Classification and Management

The classification and proposed disposition of the various waste materials is described in this section.

3.1 Equipment Cleaning Liquids

The equipment cleaning waste waters collected in the tank transport will be managed as class I hazardous liquid waste and will be transported offsite for disposal at an approved disposal site. It is anticipated that the commercial facility operated by Gibraltor Chemical Resources, Inc. will be utilized for this purpose, or, as an alternative, 3.1 Equipment Cleaning Liquids Continued

another approved facility may be specified. All transportation will be manifested in accordance with TWC and DOT requirements.

3.2 Equipment Cleaning Solids

All waste solids from contaminated equipment cleaning, spent safety equipment and miscellaneous sources will be managed as a class I hazardous waste. These wastes will be containerized and transported offsite for disposal at an approved disposal facility and will be manifested in accordance with TDH and DOT requirements.

4.0 Decontamination Objectives

Appropriate criteria have been established for the decontamination verification of the tank and ancillary equipment.

4.1 Tank and Equipment Decontamination Objectives

Decontamination of the tank and ancillary equipment will be verified by the analysis of a sample of the final rinse water. Decontamination will be complete if the following objectives are met:

Table 1

Equipment Decontamination Objectives

Parameter	Maximum Concentration (mg/l)
Total Organic Carbon	200
ph	between 5.0 - 9.0

5.0 Closure Costs

The estimated cost of closure is as follows:

Water Blaster and Cleaning Materials	$ 300.00
Misc. Labor (40 hours @ $10.00/hour)	$ 400.00
Waste Disposal (@ $0.40¢/gallon (i.e. 5000 gallons)	$2000.00
Transportation	$ 500.00
Demurrage (@ $50.00/hour x 20 hours)	$1000.00
Safety Equipment	$ 100.00
Supervisor and Certification (25 hours @ $60.00/hour)	$1500.00
Sub Total	$5800.00
Contingency	$ 200.00
Total	$6000.00

6.0 Closure Schedule

Once the 30-day public comment period is completed and TWC approval of the closure plan is received the closure plan will be implemented within the following 60 day period.

7.0 Miscellaneous Procedures

In addition to the proposed plans contained within the previous sections, the following procedures will be utilized during closure:

7.1 Cleaning Equipment Decontamination

Upon completion of tank cleaning activities, equipment which contacted the waste will be cleaned. This will be accomplished by manual removal of contaminated materials and placement in a storage drum (for) solids) or the tank transport (for liquids) pending disposal as a class I hazardous waste in accordance with section 3.0.

7.2 Supervisor/Monitoring

Technical representatives of Dixie and DPC along with representatives of Dixie's consulting registered professional engineer will be on site during all phases of field operations to monitor waste removal and decontamination procedures. A field log will be maintained by representatives of the consulting engineer documenting all closure acitivities in accordance with this plan.

7.3 Verification/Certification

Upon completion of the waste removal and decontamination verfication objectives, a registered professional engineer will certify that closure has been completed in accordance with the approval plan. Independent

All data developed during the closure program will be compiled into a verfication report and submitted to the TWC along with Dixie's certification.

8.0 Safety Plan

This site safety plan addresses the minimum safety requirements for preforming the field work associated with this closure plan.

8.1 Site Safety Officer

For the duration of field work activities, the consulting engineering representative will be assigned the duties of site safety officer. The duties of the site safety officer are as follows:

- Implement all provisions of the safety plan.
- Monitor the atmosphere in the vicinity of field personnel.
- Amend field safety procedures and equipment based upon monitoring data and field conditions.

8.2 Safety Training

All persons participating in field activities will be provided on-site training in the use of the required protective equipment and safety practices to be followed during the implementation of the project. This training will be conducted prior to field work and will be reported on an as needed basis during the project.

8.3 General Safety Procedure

Two types of work are included in the scope of this project.

- o Waste removal.
- o Decontamination of tank and ancillary equipment.

Different safety precautions will be required for the activities scheduled at the site. The steaming and washing of the tank will require more restrictive safety precautions than the remaining work, as indicated.

8.3.1 Tank Entry

Protective equipment required for the inspection and cleaning of the tank is as follows:

A. Respiratory Protection

- o Airline or SCBA (when entering tanks if necessary).

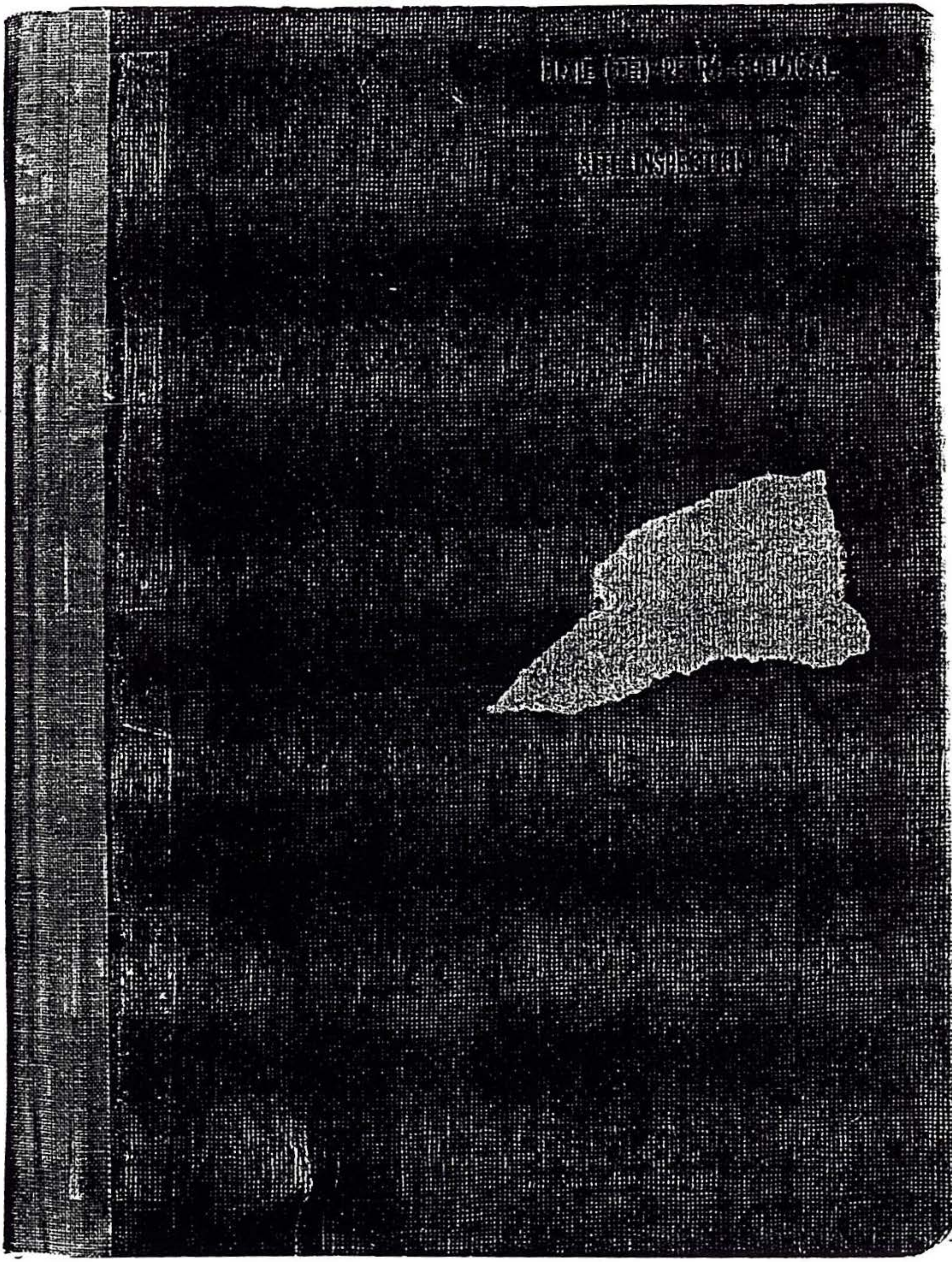
B. Protective Clothing

- o Chemical resistant clothing.
- o Chemical resistant boots.
- o Chemical resistant gloves.
- o Hard hat.
- o Safety glasses and/or chemical goggles.

The protective equipment required can be modified by the site safety officer.depending upon field conditions and the results of a real time monitoring. Workers will remove disposable protective clothing at the end of work day and dispose of it in receptacles on-site. These will be disposed of as a class I waste in accordance with section 3.0.

REFERENCE 4

"Dixie (TEI) Petro-Chemical, Site Inspection Logbook of Field Activities, Fluor Daniel, Inc.


DIXIE (TEE) PETRO-CHEMICAL
SITE INSPECTION

FLUOR DANIEL, INC.
12790 MERIT DR.
SUITE 200, LB-169
DALLAS, TX. 75251

Phone #'s

- LONGVIEW WATER QUALITY (SCOTT THOMPSON) (903) 753-4870
- TWC - Tyler (Dist. No. 5) NOEL LUPER, P.E. (903) 595-3466
- MALCOLM BENDER (EPA Region VI) (214) 655-8378 -
- Jim WOOLRIDGE DELTA SOLVENTS (903) 759-7151
- HARRY ALLEN - CITY OF LONGVIEW (903) 237-1250 - 1100 @
- MIKE FRANKS - DIXIE PETRO-CHEMICAL (903) 643-7362

BOORUM & PEASE

Composition Book • 9¾ in. x 7½ in.

Available As:

Item No.	Sheets	Ruling
09-9130	60	College Ruled & Margin
09-9132	60	College Ruled & Margin & Paged
09-9134	100	College Ruled & Margin

ESSELTE

DIXIE (TEI) PETRO-CHEMICAL - SITE INSPECTION
TXD079836743

4/13/97 Things to Note DURING RECONNAISSANCE

1). The # of Workers on site 4

2) What facilities are adjacent to the site ?

3) What is site accessibility ~~like~~ to the public like ?.

4). Where is the nearest school or daycare and their populations? (Workers, Teachers, + Students)

5) Are There any Monitoring Wells ?

6) Are There any SWater intakes nearby or municipal wells nearby? If so how far?

7) What is water Quality like in City of Longview? (Background Water Quality)

(8) What is the direction of Ground Water Flow throughout Longview?

(9) What is the direction of nearby and on-site surface water ~~flow~~ drainage? What is the extent of the 15-mile target limit distance?

(10) What are the nearby sensitive environments?

(11) Are there any agricultural resources nearby?

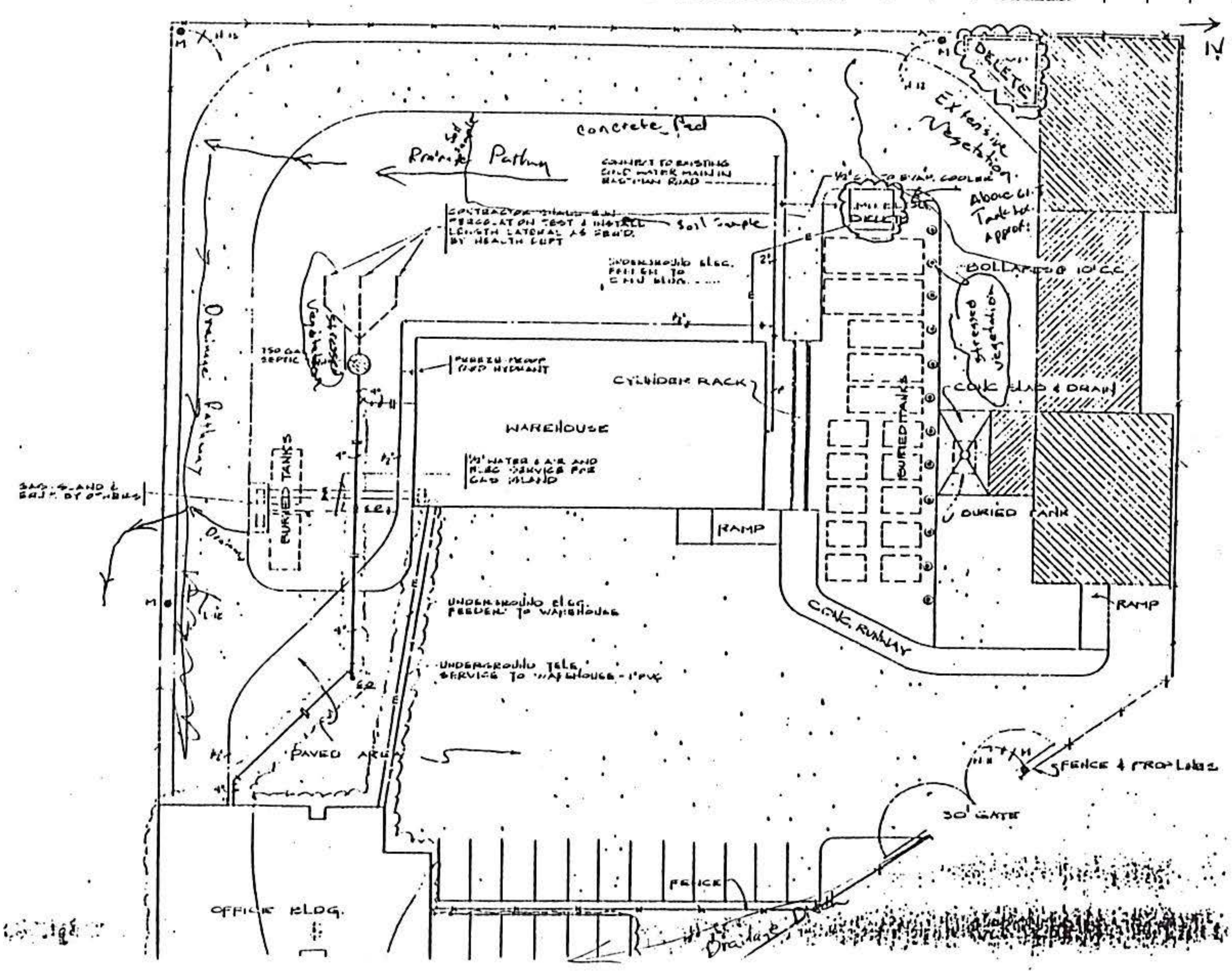
(12) Identify Source areas

Things to Note Con't.

13) Locate the shower PPE

14) What are some Background sampling locations?

SITE SKETCH



T.E.I PETRO-CHEM, INC.

LONGVIEW, TEXAS

T.E.I - RAY THOMAS

SITE RECONNAISSANCE Inspection 7/19/93

KEITH WESTBERRY / STEVE DICKSON - FDI

ARRIVED AT 9:25 AM ON SITE - HNU was prepared for use.

- MET w/ DIXIE Representative Wayne Penick at 9:40
- He explained a little about the site map and told us that all of the UST's had been removed

Photo #1 - View facing SE of the front of the warehouse Building.

HEALTH & SAFETY NOTE: FIRE ANTS!

Photo #2 - VIEW SE of former UST locations just north of the warehouse. / TAKEN from area where the sump was located.

- Area of stressed vegetation was noted just north of the old UST locations / north of warehouse.

- The site is completely fenced, w/ gates in operation

- All tanks were removed and taken from location

Adjacent properties: Business to North / Trailer Park to the South and SW of site

Photo #3 View facing N of business adjacent to site.

Mr. Penick wants a copy of photo's taken.

- Vegetation behind Warehouse (NW) is somewhat stressed but could be due to lack of top soil.

- Photo #4 - Facing S - Picture of some type of GW water spring or SW drainage.
  - Water had a sheen on it.

- Photo #5 - Facing SE of Back of Warehouse
  - Picture taken from back of Property.

- Drainage Path from back of site is along back fence (west side) running South until it just reaches the south fence & from there it enters into a small concrete lined drainage ditch which flows East along the south fence

Photo #6 - View facing East of the drainage path along South fence.

photo #7 - View facing North of drainage path into the ~~do~~ concrete drainage ditch.
- Extensive Vegetation in both pic's.

Photo #8 - View facing South from SW corner of site / Pic of Adjacent Trailer Park

- There does not appear to be any public accessibility to the site / There are 2 fences

- 3-4 homes in trailer park w/in 200 ft of site

Photo #9 - View facing SW of Directly adjacent homes

- Septic Tank in Back of Warehouse is Uncovered

- Black Tar From Back of Building - Coming from underneath the walls - Photo #10.

- Mr. Noel LUPER AND EARL A. ZAPP - (TWC-Dist.5) McConway ; Torley arrived on site at 10:00 a.m.

- Mr. Zapp. informed me of contam. trouble on site and gave us a card identify

- Photo #11 - View facing South of drainage going off site.
Photo #12 - View facing SW of drainage flowing off-site from a pad due south of warehouse.

- Pad south of site could possibly have UST's under it. There is extensive cratering around the pad

Drainage off site is flowing mostly south.

- Samples ~~#~~ should be taken directly south of fence along drainage pathway.

- The office building in the SE corner of the site is not there.

Photo #13 - View facing West of the front of the warehouse w/ all of the rail car parts in front.

Photo #14 - View facing NW - Drainage Ditch running South of site - Taken from Gun Springs Road.

- Photo #15 - View of tainted Surface Water Coming from site - Water had multi-colored sheen on it. - Take soil/sediment and surf. Water samples here.

- Tie Mill (Saw Mill) located NE of site across RR Tracks

Photo #16 - Photo of McConway Railroad sign on front fence

Photo #17 - View from front gate facing NE of SAW MILL.

1105 Left site

4/19/93

Dan Bogue 237-1065

Engineering Services - City of Longview

- Mike Brown - Water Treatment Plant - Plant Manager

David Harder - Systems Engineer

4-18-93 - Daily Log of Water Quality

Sabine Water Treatment

Raw Chloride - 40 ppm

Raw pH: 7.11 ppm

NH_3: 171 ppm

Fluoride: 7 ppm.

Calender Year Avg. Flow - 610-600,000 cfs

Trena Nelson.

Photo #18 - View Facing West of a possible landfill that was unauthorized.

Photo #19 - View Facing SW of same as above.

5/23/93 - 4:00 p.m. - Steve Dickson / Keith Westberry

Spoke w/ [redacted] at [redacted]
Water Well is 110 feet deep. Gave permission
to sample.

Marked Sample locations 14, 15, & 16

#14 & 15
300' E. of the int. of RR tracks and Gum Springs Road
on South side of Gum Spring.

#16
600' S of intersection of Gum Springs Road and RR tracks

An attempt is being made to ~~sample~~ locate 1 more well
to Sample.

R.B Thomas - Country Club. Rt 7 Box 457
Longview Tx. 75602

Finished Site Work at 5:45 and left.

5/24/93 -

Health and Safety Meeting - 7:30 a.m. - MacDonald's

Present: Steve Dickson, Keith Westberry, Doug Cheek, George Form

- All parties acknowledged reading the Health and Safety Plan and signed the compliance agreement from.

Further discussion over site will occur at the site. All site procedures, and history was discussed. - All health topics were discussed and noted. All health and safety credentials (i.e. OSHA training certificates, physical exam approval) were presented by all employees.

Arrived on-site at 9:00 a.m.

Representative from DPC Industries - Wayne Penick
from McCorvey & Torley - Kurt D. Ritch, PG
Conlan Engineering Co.

"

- Mr. Ritch is representing McCorvey & Torley and has okayed the dumping of decon water on to the property per Briyan Deschamps -

0930 HnU model P1 101 calibrated
HAZCO model # 1718

Camera is on picture # ~~12~~ 14

Picture #14 — Sample SS-13
Time: 09:50

Picture #15 - Sample SS-045
Time: 10:22 - Taken 25 ft East of the trailer on Lot 38

Picture #16 - Sample SS-084
Time: 10:29 Taken between Lot 41 & 43 - Approx
5 ft East of Lot 41.

* Permission granted to sample trailer park by Mike McGuire
Trailer owned by Eastman Villa (EVS) investments

photo #17 Sd-#14 in Creek 300' ~~SW~~ SD EAST
of int. at R.R. Track + Gum Springs Rd., on South
side of Road

SD ~~photo #18~~ SW-#15 also is photo #17
same Location as Above (Sd-14)
in Creek (MS/MSD)

Samples 14 & 15 taken in Long Creek. Creek had extensive oily sheen
staining on surface of water and on creek Banks. Odor was present.

Sample - SD-16 photo #18

Time: 11:43

Pic taken of creek where sample was

- taken at confluence of Long Creek and intermittent.

Creek had noticeable sheen on surface water and

creek bank.

Sample SW - #15 'Hydac Calibration

pH = 7.04 pH 4.0 Test = 3.99

Conductivity 288 μs/cm 10.0 Test = 9.93

Temp 74.1°F

Sample - photo # 21 or 22 - SW-1 & 2

SW-1 Time: 13:45 pH : 7.26

SW-2 Time: 13:50 Cond. = 7.71

SD-3 Time: 13:55 Temp. - 3.61

Photo # 23 - Asphalt-like material under surface soil at depth 4-5 inc

SS-06

Time: 2:30

Photo #24 - Soil was very clean - It was all sand and obvious fill

SS-07 material.

Time: 2:40

Samples 6 & 7 were split with the two different representatives - The samples were custody sealed and handed over to the representatives at 15:05 p.

We completed all sampling activities and left the site by 16:30 hours.

A total of 11 samples were collected

4-5 inches.

us fill

5/25/93 - Sampling Continued

Arrived at the site @07:20 a.m.
Persons on site for Health & Safety meeting
Keith Westberry, Doug Cheek, Steve Dickson, George Farmer
EPA Representative - Malcolm Bender
was present and read and signed the Health and Safety Addendum.

Site Safety meeting was held at 7:25
Site History and safety procedures were discussed at this time.

HnU calibrated.
Beginning w/ Camera #2 Today

- DECON Station was set up and began sampling at 8:00 AM.

Sample - SD-08
Photo #1
Time: 8:25 a.m - Sample was all Gravel - Sample was taken in area where oily sheen was very apparent on standing water
- Splits were also collected at this location

Sample SD-09
photo #2
Time: 910 Auger to 4' & Started sampling clayey soil to ~4' then Black silty soil, heavily stained, sewage type ODOR (Air monitoring kicks on HnU to 10-15 units, Sustained at 2-3 units, BZ = 0, Bkgd = 0 ~~with~~ SD HnU.)

SS-09 (cont) - was split sampled
Black material continues down to TD of 6.5'
Hit water table at ~5.5', Gravel zone at ~3.0'
There is a septic tank ~20' to the southeast of the sample location, according to M.C.+T personnel.

9:40 Sampling completed, begin decon for Rinsate blank. over augers

time

RB-21-
Time: 10:05

SS-10 ; SS-11 - split samples were taken
photo #3
Time: 12:00

11:23 change to work plan, approved by Malcolm Bender:
at SS-10 + SS-11, work plan said sample 4-6'
Based on significant readings on H_N 4
(peaked to 150 units, sustained at 20 inside to Hole.
BZ = 3 units

ken
arent
tion

~~PPE~~ SD PPE upgrade to Level D with Respirators

Sample will be collected from ~~2-6'~~ KW 0-5' Now

Sample was taken from 4 different Auger holes drilled 0-3' in depth. Greater depth could not be attained due to subsurface obstructions. The VOA samples were collected while drilling holes. The semi-volatiles and inorganics were taken as composites from the remainder of the material.

- During the sampling ranges on the HNU. between
  20 to 400 units in the hole.
- The Breathing zone was sustained at levels between
  0 and 20 units

Lunch Break = 1:00

Back on site at 2:00 p.m

Sample SS-12
photo # 4
Time: 14:45
Samples were split w/ Facility Representatives
- samples taken between 4-5 feet for VOA's
- Samples are composites 4-6'
No detects on the HNU were recorded.

This sample concluded the on-site samples.

All split samples were signed for and delivered in a cooler custody sealed - at 15:00 hours
Arrangements were made to send a copy of traffic reports to both parties,

REFERENCE 5

Luper, C. Noel, "Texas Department of Health RCRA Inspection Report", March 16, 1984.

TEXAS DEPARTMENT OF HEALTH
BUREAU OF SOLID WASTE MANAGEMENT
HAZARDOUS WASTE INSPECTION REPORT
(if additional space is required for any statement, use back of sheet)

yes/no

PART I GENERAL DATA (Use with all inspection reports) Inspection Date 3-16-84

a) Identification and purpose of inspection: TDH Region # 7

Entity Name DIXIE ~~[illegible]~~ PETRO-CHEM, INC.

EPA ID# TX D 079836763 TDH Inspector's Name(s) C. NOEL LOPEZ, P.E.

TDH File # 67032 Next Inspection Date 9-84

Type of Inspection (Circle): Initial, Routine, Enforcement Action, Compliance Schedule, Complaint,

Canvassing, Other

b) Site location: 764 EASTMAN RD.

LONGVIEW, TX.

County GREGG Site Phone (214) 757-3920

c) Owner/Operator Data:

Name DIXIE PETRO-CHEM., INC.

Mailing Address P.O. BOX 8406

City LONGVIEW State TX Zip 75607 Phone

d) Type of Ownership: Federal ___, State ___, County ___, Municipal ___, Private X, Other ___

e) Persons Contacted (* those participating in inspection): * JOHN K. PERRIN, ENV. SPEC. & MARK CHURILLA, LONGVIEW HD.

f) Describe services and activities provided at this location: WHOLESALES OF BULK & PACKAGE CHEMICALS

g) Has entity completed an appropriate hazardous waste determination action for each solid waste produced? YES
Entity determination action (Section 325.273) was by:

Applying knowledge of processes to identify wastes in Tables I, II or III? YES

Testing in accordance with 40 CFR, Part 261, Subpart C or equivalent test method? ___

Comments on how inspector verified waste determination actions of entity:

h) Entity notification data (latest information available to inspector):

Curently notified as (check applicable): Generator X, Transporter X, TSD Facility X, Small-Quantity Generator ___, Nonhandler ___, Not Notified ___, Other ___

At the time of the inspection, did the current notification correctly reflect site information data and appropriate hazardous waste activities? YES

Explain in detail any apparent discrepancies:

If entity is a TSD facility, which activities occur; Storage X, Treatment ___, Disposal ___.
Permit issued ___, if not permitted, Part A submitted YES, Part B submitted YES.

i) Which additional hazardous waste inspection report parts are attached: Part II Generator X, Part III Transporter X, Part IV Facilities-General Data X, Part IV Specific Facility (Inspection Report (A thru I)) A, B., None (Inspection indicates no hazardous wastes generated or handled) ___

TDH Inspector's Signature [signature] Date ___

Approved By: ___ Date ___

5-1

TEXAS DEPARTMENT OF HEALTH
BUREAU OF SOLID WASTE MANAGEMENT
HAZARDOUS WASTE INSPECTION REPORT

yes/no

PART II GENERATORS DATA (325.291 through 325.300) Inspection Date 3-16-84

Entity Name DIXIE PETRO-CHEM, INC. TDH File No. 67032

a) Describe all hazardous waste generating processes [list all hazardous waste generated on last page j)1.]:
LINE FLUSHING & TAILINGS FROM CUSTOMER PROCESS.

b) Generator applicability verification [325.292]

1. Are the wastes identified on EPA Notification Form 8700-12 Block IX generated or handled? YES

   Identify and explain any difference: ______

2. Does generator import and/or export hazardous wastes? NO

3. Are any of the generator's wastes used, reused, recycled, or reclaimed [325.299]? NO

   Note: List such wastes on last page j)1 and indicate in remarks column if waste used, reused, recycled, reclaimed.

   Identify user, reuser, recycler, reclaimer:

   NAME: ______ EPA I.D. No. ______

   ADDRESS: ______ TDWR/TDH I.D. No. ______

4. Does the inspection findings indicate that the generator may be classified as a "nonhandler"? NO

5. Does the generator wish to renotify as a "nonhandler"? NA

6. Did you leave a blank EPA Form 8700-12 and instruction sheet with generator for submittal of "Subsequent Notification"? NA

   If yes to each question b)4,5,6; skip to i) and complete Part II

   If no to any of questions b)4,5,6; then complete the remainder of Part II

c) General hazardous waste accumulation area requirements [325.293]

1. Does the generator accumulate hazardous waste on-site for short-term 90 days or less [325.293(a)]? YES
   State reason for any delay of any shipment of waste-causing short-term storage period to exceed 90 days [Identify wastes on last page j)2]: ______

2. Has generator applied for on-site long-term storage facility Permit [325.293(b)]? YES

   If yes to question c)2., skip to e) and complete Part II. Submit Part IV and appropriate Part IV subsections for storage facility inspection.

   If no to question c)2., complete c)3. through d)4. for accumulation area inspection.

3. Are DOT containers, per 49 CFR Part-172, used for storage of waste? ____

   Are containers marked and labeled per 49 CFR Part 172? ____

   Are containers with incompatable wastes physically separated? ____

PART II (Cont.) Inspection Date 3-16-84

Entity Name DIXIE PETRO-CHEM, INC. TDH File No. 67032

c) yes/no

Does generator have a periodic inspection program established for the management of the waste containers in the storage area? ____

Did a visual inspection of waste container reveal any signs of physical or structural degradation? ____

Are any containers set aside because they were refused pick up by transporter or acceptance by TSD facility because of physical conditions? ____

(Identify any damaged container on last page j)l remarks column and type of degradation, i.e., rusted, corroded, leaking, bulging, etc.)

Are oversized containers available for damaged container transport or disposal? ____

Comments: ____________________

4. Are tanks used for storage of waste? ____

If yes, are any tanks underground? ____

Are various types of listed wastes mixed in tank? ____
(if yes, indicate which wastes are mixed on last page j)l remarks
Are tanks with incompatible wastes stored physically separated? ____

Does generator have a periodic inspection program established for the tanks in the storage area? ____

Did a visual inspection of the tanks in the storage area reveal any signs of physical or structural degradation? ____
(Identify any damaged tank on last page j)l remark column and type of degradation, i.e., rusted, corroded, leaking, bulging, etc.)

Can structural integrity of all tanks be verified (refer to 325.341(e)(3) for criteria)? ____

Comments on integrity check methods: ____________________

Comments: ____________________

5. Does the accumulation area have a containment system that will prevent discharge of hazardous waste into the land, groundwater, and surface water (refer to 325.340(f) for criteria)? ____

Describe any containment system deficiencies: ____________________

6. Are any other storage methods used for accumulation of wastes, i.e., waste piles, surface impoundments, etc.? ____

Has the generator applied for a facility permit for these other methods of accumulation: ____

Describe storage method: ____________________

7. Is the accumulation start date clearly marked or indicated on each storage container and/or tank? ____

Describe descrepancies: ____________________

8. Does generator act as his own transporter when moving wastes to authorized off-site facility? ____

If no, is registered transporter used? ____

Identify transporter:

NAME: ____________ EPA I.D. NO. ____________

ADDRESS: ____________ TDWR/TDH I.D. NO. ____________

PART II (Cont.) Inspection Date 3-16-94

Entity Name DIXIE PETRO-CHEM, INC. TDH File No. 67032

c) yes/no

9. Do the inspection findings indicate that generator may be classified as "small-quantity" generator [325.298]? ____

If yes, does small-quantity generator handle any quantities of fully regulated hazardous wastes? ____

If yes, explain: ____

If yes, identify the generator's "special waste(s)" and the utilized disposal facilities by name, address, and TDWR/TDH Permit # or out-of-state EPA I.D. #: ____

Does the generator wish to renotify as small-quantity generator? ____

Did you leave a blank EPA Form 8700-12 and instruction sheet with generator for submittal of "Subsequent Notification"? ____

If this is an inspection of a notified small-quantity generator or notified generator that you have just given a blank 8700-12, then skip to h) and complete Part II.
If not, complete d) through j) to complete Part II.

d) Specific hazardous waste accumulation area requirements - notified generators:

1. Does the generator have a satisfactory "Personnel Training" program for personnel handling hazardous wastes? ____

Identify any inadequacies: ____

2. Does the generator's "Preparedness and Prevention" planning include hazardous waste activities? ____

a. equipment available? ____

b. arrangements with local authorities for services in case of emergency? ____

Identify any inadequacies: ____

3. Does the generator have a satisfactory "Contingency Plan and Emergency Procedures" for the handling of hazardous wastes? ____

a. plan available? ____

b. emergency coordinator identified? ____

c. emergency procedures identified? ____

Identify any inadequacies: ____

e) Does generator meet the pretransport requirements of DOT [325.294]? YES

Note: Refer to CFR 49 Parts 172 and 173 (dated 10-1-81) for specific DOT regulations and requirements.

1. Identify packaging discrepancies [CFR 49 Part 172.101 & Part 173]: ____

2. Identify labeling discrepancies [CFR 49 Part 172.400]: ____

3. Identify marking discrepancies [CFR 49 Part 172.300]: ____

5-4

PART II (Cont.) Inspection Date 3-16-84

Entity Name DIXIE PETRO-CHEM, INC. TDH File No. 67032

e) yes/no

4. Identify placarding discrepancies [CFR 49 Part 172.500]: ____

f) Do the generator's manifesting procedures meet all the requirements of 325.295? YES

Identify manifesting discrepancies: TEXAS WASTE SHIPPING CONTROL TICKET

g) Does the generator meet all the reporting requirements of 325.296? YES

1. Annual reports submitted? YES
2. Monthly Waste Shipment Summary Reports submitted? YES
3. Exception reports submitted? NONE YET
4. Identify reporting inadequacies: ____

h) Does the generator meet all the record keeping requirements of 325.297? YES

1. Manifests filed for 3 years? YES
2. Annual reports filed for 3 years? YES
3. Monthly summaries filed for 3 years? YES
4. Exception reports filed for 3 years? YES (IF NECESSARY)
5. Retention of any files for review over 3 years? NA
6. Identify record keeping inadequacies: ____

i) Is generator's handling of hazardous wastes considered satisfactory? YES

Improvement since last inspection: ____

Comments and Recommendations: CURRENTLY WASTES BEING SENT TO TWO TSD.
1) WASTEWATER - GIBRALTER WASTEWATERS.
2) SLUDGES - CHEMICAL WASTE M'G'M'T. OR B.F.I.

PART II (Cont.)

Inspection Date 3-16-84

Entity Name DIXIE PETRO-CHEM, INC.

TDH File No. 67032

j)

1. List the type and estimated quantity of each hazardous waste and/or mixture of hazardous wastes generated (325.273), and indicate estimated quantity of each such waste accumulated on day of inspection [325.293]:

WASTE GENERATION				WASTE STORAGE					
EPA		DOT	Qty/Mo	Utilized Containers				Total	
Haz W# & Code	Substance Name	ID#	Generated (Indicate Units)	Type	Size	Tot. # Cont.	DOT Spec.#	Accum. Units lbs/kgs	REMARKS
D001	INK PRESS CLEANUP SLUDGE		19/YEAR	DRUM	55GAL	3		1200 ±	
D001	WASTEWATER W/ORGANICS		5000GAL/MO	TANK	16,000			NONE	SHIPPED PRIOR TO SURVEY

2. Identify any accumulation of waste by (*) when storage exceeds 90 day allowable short-term storage 325.293(a).

3. In Remarks column, identify any storage container or tank that is in unsatisfactory physical condition or that exhibits other descrepancies, i.e., damage, leakage, accumulation start date missing, marking, labeling, etc. [325.293(a).

TEXAS DEPARTMENT OF HEALTH
BUREAU OF SOLID WASTE MANAGEMENT
HAZARDOUS WASTE INSPECTION REPORT

PART III TRANSPORTERS (325.311 through 325.316) Inspection Date 3-16-84

Entity Name DIXIE PETRO-CHEM, INC. TDH File No. 67032 yes/no

a) Briefly describe all waste handling activities and procedures performed by transporter:
SEE GENERATOR & FACILITY INFORMATION.

b) Describe physical condition of terminal facility waste accumulation area and hauling equipment:
WASTE ACCUMULATION AREA CLEAN. MOST WASTE TRANSPORTED BY GIBRALTER WASTEWATER, INC.

c) Transporter/Generator Activities (325.311):

Do any of the transporter operational activities generate hazardous wastes? YES

Does the transporter carry waste into the U.S. from abroad? No

Does the transporter mix hazardous wastes of different DOT shipping descriptions by placing them into a single container? No

Does the transporter accumulate unmanifested municipal hazardous waste from small-quantity generators? No

If yes to any question, complete Part II of inspection report.

If yes to any question, is the transporter also notified as a generator or "small-quantity" generator? YES

If transporter is not a notified generator, did you leave a blank EPA 8700-12 form and the instruction sheet for the transporter to submit a "Subsequent Notification"? NA

Comments:

d) Does the transporter accumulate manifested and/or unmanifested hazardous waste for more than 10 days at the transporter facility [325.311(d)]? YES

If yes, Permit issued ____, if not permitted, Part A submitted YES, Part B submitted YES

If yes, complete Parts IV and applicable Part IV Subparts of inspection report.

e) Does the accumulation area have a containment system that will prevent discharge of hazardous waste into the land, groundwater, and surface water? (refer to 325.340(f) for criteria) YES *

Describe any containment system ~~deficiencies~~: * SEAL AGAINST BUILDING WALLS NEEDED. ALSO ONE CRACK IN ~~the~~ CONTAINMENT WALL.

5-7

PART III (con't)

Entity Name DIXIE PETRO-CHEM, INC.

Inspection Date 3-16-84

TDH File No. 67032

yes/no

f) Does the transporter comply with manifest requirements of 325.312? YES

1. Signs & dates generator's manifest? YES

2. Receives signed & dated manifest from facility operator, rail or water transporter or another transporter accepting hazardous waste? YES

3. Manifests hazardous waste shipments out of U.S.? NA

Identify any discrepancies:

g) Record keeping requirements:

1. Does the transporter retain copies of hazardous waste manifests and/or shipping papers for three years in accordance with the requirements of 325.314? YES

Identify any discrepancies:

2. Did a random review of the transporter's records indicate that the delivery requirements of 325.313 appear to be met? YES

Comments: DIXIE IS RECEIVING TSD (STORAGE) FACILITY.

h) Hazardous waste discharge requirements:

1. Does the transporter understand his actions as required in 325.315 in the event of a hazardous waste discharge? YES

2. Does the transporter realize his responsibilities for clean up of hazardous waste discharges occurring while he is transporting hazardous waste (325.316)? YES

Comments:

i) Is transporter operation considered satisfactory? YES

Improvements since last inspection:

Comments and Recommendations: CONCRETE WALL AROUND STORAGE TANK HAS THREE PLACES WHERE SPILLED LIQUIDS COULD ESCAPE. WHERE WALL ABUTS BLDG, AND ONE CRACK. THIS WAS DISCUSSED WITH JOHN PERRIN.

5-8

TEXAS DEPARTMENT OF HEALTH
BUREAU OF SOLID WASTE MANAGEMENT
HAZARDOUS WASTE INSPECTION REPORT

PART IV Facilities - General Data (325.331 thru 325.339) Inspection Date 3-16-84

Entity Name DIXIE PETRO-CHEM, INC. TDH Permit/File # 67032 yes/no

a) Type of hazardous waste facilities and/or activities conducted at the location:

1. Has a Permit Part A been submitted? YES

2. Has a Permit Part B been submitted? YES

3. Check all specific hazardous waste facility type(s) found at the waste handling location. Include appropriate Inspection Report Part IV Subpart(s) for every specific facility type found on location.

Note: * Use appropriate EPA inspection checklist for Part IV Subpart(s).

4. Check all TSD (Treatment, Storage, Disposal) waste activities carried out in connection with each specific facility type.

I.R. Part IV Subpart	Specific Facility Type	Specific TSD Activities for Facility: Treat	Store	Dispose
A	X Containers	___	X	___
B	X Tanks	___	X	___
C *	___ Surface Impoundments	___	___	___
D *	___ Waste Piles	___	___	___
E *	___ Land Treatment	___	___	___
F *	___ Landfill	___	___	___
G *	___ Incinerator	___	___	___
H *	___ Thermal Processing	___	___	___
I *	___ Chem, Phy, Bio, Processing	___	___	___

b) Required notices [325.333]:

1) Does facility receive waste from off-site? YES

2) Does facility import foreign hazardous waste? No

Has TDH been notified as required by 325.333(a)(1)? NA

3) Comments: ______

c) Waste analysis requirements [325.333(b)]:

1. Does owner/operator have current hazardous waste analysis plan for all waste received as required by 327.333(b)(5)? YES

A) Analysis parameter defined? YES

B) Test methods described? YES

C) Sampling methods described? YES

D) Frequency of analyses established? NA

E) Generator's analyses to be used identified? YES

F) Generator's waste receiving inspection described? YES

G) Identify any inadequacies in plan: COMMENTS: WASTE STREAM IS CONSISTANT. H.W. ANALYSIS DONE FOR PART B ADEQUATE, NO TESTING OR INDIVIDUAL WASTES NECESSARY. MOST WASTE AT FACILITY (≥ 95%) IS SELF GENERATED.

2. Are the required waste analyses accurate and up-to-date for the waste being handled at the facility? YES (SEE COMMENT C.1)

A) Waste analyses recorded? YES

B) Waste analyses current? YES

TEXAS DEPARTMENT OF HEALTH
BUREAU OF SOLID WASTE MANAGEMENT
HAZARDOUS WASTE INSPECTION REPORT

PART IV (con't)

Inspection Date 3-16-84

Entity Name DIXIE PETRO-CHEM, INC.

TDH Permit/File # 67032

yes/no

C) Waste receiving inspections recorded? YES

D) Identify any discrepancies: ______

d) Facility security requirements [325.333(c)]:

1. Does the facility security system comply with all requirements for limited access? YES

A) 24-hour surveillance system—guards or electronic? NA — PATROLLED REGULARLY

B) Barrier—fence or natural? YES

C) Control access points? YES

D) Signs? YES

E) Identify any inadequacies: ______

2. Is facility exempt from security requirements per 325.333(c)(1)(A) or 325.76(c)(1)(B)? No

If yes, explain circumstances: ______

e) Facility inspection [325.333(d)]:

1. Does the owner/operator have a writen inspection plan and schedule per 325.333(d)(2)? YES

2. Does the owner/operator maintain a written record or log of inspections and remedial actions (or repairs accomplished) as per 325.333(d)(4)? YES

Identify any discrepancies: ______

3. Does the record or log indicate that inspections have been accomplished in accordance with the plan and schedule? YES

4. Does the record or log indicate any remedial actions or repairs needed and/or performed as a result of inspections? NO

5. Comments: NONE NECESSARY

f) Personnel training [325.333(e)]:

1. Does owner/operator have a personnel training program meeting the minimum requirements of 325.333(e)]? YES

A) Training of personnel adequate? YES

B) Instructor qualified? YES

C) Emergency procedures and equipment covered? YES

D) Are all personnel trained? YES

E) Annual training update required for personnel? YES

F) Identify any inadequacies: ______

TEXAS DEPARTMENT OF HEALTH
BUREAU OF SOLID WASTE MANAGEMENT
HAZARDOUS WASTE INSPECTION REPORT

PART IV (con't) * Inspection Date 3-16-94

Entity Name DIXIE PETRO-CHEM, INC. TDH Permit/File # 67032 yes/no

2. Does owner/operator maintain adequate personnel records including job titles, job description, description of training required and records of training completed? YES

Are records current and maintained for three (3) years after employee termination? YES

Identify any discrepancies: KEPT FOR 7 YEARS

g) Ignitable, reactive or incompatible waste requirements [325.333(f)]:

1. Does owner/operator handle these types of hazardous wastes? YES

2. If yes, in which specific facility type(s) (see a) of this Part IV) were these types of wastes found to be handled? TANK & CONTAINERS

3. If yes, are wastes separated from each other and protected from sources of ignition or reaction? YES

4. Are "No Smoking" signs conspicuously placed in designated waste handling area? YES

5. Does owner/operator have disciplinary policy to enforce "no smoking" requirement in designated waste handling area? YES

h) Location standards [325.333(g)]:

1. Is facility located within a 100-year floodplain? NO

2. If yes, is facility protected by a levee approved the TDWR? NA

3. Comments:

i) Preparedness and prevention requirements [325.334]:

1. Does facility indicate any evidence of fire, explosions, or contamination of the environment due to release of hazardous wastes? YES *

If yes, explain: NOT WASTE BUT SOME EVIDENCE OF PRODUCT SPILL ON SURFACE. DISCUSSED ~~[illegible]~~ SOIL SAMPLING & CLEANUP BE INCLUDED IN ~~[illegible]~~ CLOSURE PLAN.

2. Is the facility provided with emergency equipment? YES

A) Alarm system available? NO

B) Communication system available? YES

C) Fire control equipment? YES

D) Spill control equipment? WRITTEN AGREEMENT W/ CONTRACTOR FOR EMERG. CONTROL EQUIP YES

E) Decontamination equipment? WATER, CHEMSORB YES

F) Adequate water supply, volume and pressure available? YES

G) If no, explain:

TEXAS DEPARTMENT OF HEALTH
BUREAU OF SOLID WASTE MANAGEMENT
HAZARDOUS WASTE INSPECTION REPORT

PART IV (con't)

Inspection Date 3-16-84

Entity Name DIXIE PETRO-CHEM, INC.

TDH Permit/File # 67032

yes/no

3. Do the facility records indicate adequate testing and maintenance of the emergency equipment? YES

If no, explain: PERFORMED YEARLY BY SUPPLIER. RECORDS NOT KEPT IN RCRA FILE. SUGGESTED THEY KEEP COPY FOR EASY ACCESS ON ANNUAL. MONTHLY INSP. REPORT SHOWED CHECK OF FIRE EXTINGUISHERS, ETC.

4. Do facility personnel have access to the emergency equipment when handling, processing or treating hazardous waste? YES

If no, explain:

5. Is adequate aisle space provided for personnel and equipment movement under emergency conditions? YES

If no, explain:

6. Do the facility operating records indicate:

A) Appropriate arrangements made with local authorities to provide emergency services? YES

B) Were any responses as described in 325.334(f)(2) received and documented? YES

Comments: CITY OF LONGVIEW 12/1/82 EMERGENCY RESPONSE.

j) Contingency plan and emergency procedures [325.335]:

1. Does the owner/operator have an up-to-date contingency plan available at the facility? YES

A) Personnel emergency action defined? YES

B) Local authority arrangement defined? YES

C) Emergency coordinator identified? YES

D) Emergency equipment identified? YES

E) Evacuation plan for facility personnel? YES

F) Identify any discrepancies:

2. Was plan approved by TDH? IN AUSTIN FOR APPROVAL

If no, explain: PART B SUBMITTED DEC. '82

3. Has plan been amended? NO

If yes, explain reasons for amendments:

4. Have plan copies been submitted to all local authorities that will provide emergency services to facility? YES

If no, explain:

TEXAS DEPARTMENT OF HEALTH
BUREAU OF SOLID WASTE MANAGEMENT
HAZARDOUS WASTE INSPECTION REPORT

PART IV (con't)

* Inspection Date 3-16-84

Entity Name DIXIE PETRO-CHEM, INC.

TDH Permit/File # 67032

yes/no

5. A) Has an emergency coordinator been identified? YES

B) What is his or her name? BILL STEIL

C) Is this coordinator thoroughly familiar with the facility contingency plan and all of the emergency procedural requirements identified on the plan (at a minimum the requirements outlined in 325.335(f))? YES

D. Identify any inadequacies: ______

6. Has the plan and procedures ever been utilized in a actual emergency occurrence? NO

If yes, comment: NO EMERGENCIES.

-) Facility reporting system (325.336):

1. Does the owner/operator understand and utilize the hazardous waste manifest system? YES

A) Sign and date manifest certifying receipt of waste? YES *

B) Record discrepancies? NONE YET YES

C) Give transporter copy? OWN TRANSPORTER YES

D) Return original to originator? YES

E) Retain copy in file? YES

F) Identify any manifesting errors or exceptions: HAVE BEEN SIGNING & DATING MANIFEST AS TRANSPORTER ONLY EVEN THOUGH THEY STORE THE WASTE & RE-MANIFEST WASTE TO ULTIMATE TSD FACILITY. TOLD THEM TO START FILLING OUT BOTH PARTS ON MANIFEST.

2. A. Do manifest records indicate any "Manifest Discrepancies"? NO

B. Were all "Manifest Discrepancies" resolved with waste generator or transporter? NA

C. Were all nonresolved "Manifest Discrepancies" reported to TDH? NA

If no, explain nonreported discrepancies: ______

3. Does owner/operator maintain a written operating record at the facility which covers all items requested? YES

A) Description and quantity of wastes? YES

B) Location of each waste? YES

C) Waste analysis? YES

D) Incident reports? ~~[illegible]~~ YES

E) Inspection reports? YES

F) Cost estimates to close? YES

G) Post-closure maintenance estimates? NA

H) Groundwater monitoring results? NA

I) Identify any discrepancies: ______

TEXAS DEPARTMENT OF HEALTH
BUREAU OF SOLID WASTE MANAGEMENT
HAZARDOUS WASTE INSPECTION REPORT

PART IV (con't)

Inspection Date 3-16-84

Entity Name DIXIE PETRO-CHEM, INC.

TDH Permit/File # 67032

yes/no

4. Does the owner/operator retain at the facility for the appropriate timespan all records and plans as required? YES

Identify any discrepancies:

5. Does the owner/operator meet all the reporting requirements? YES

A) Annual reports? YES

B) Monthly reports? YES

C) Unmanifested waste reports? NA

D) Retains reports for specified periods? YES

E) Identify any discrepancies:

l) Groundwater monitoring requirements [325.337]:

1. Does the facility have a groundwater monitoring system operating and maintained? NA

Has the system been approved by TDH? —

Comments:

2. Does the owner/operator obtain and analyze water samples from the groundwater monitoring wells? —

Identify any discrepancies:

3. Has the owner/operator prepared an adequate and more comprehensive groundwater monitoring program as required by 325.337(d)? —

Has the program been implemented? —

Has any remedial modifications been required to the monitoring system? —

Comments:

4. Do owner/operator records indicate proper groundwater quality assessment actions? —

Identify any discrepancies:

m) Closure requirements [325.338]:

1. Does owner/operator have an up-to-date closure plan? YES *

If no, explain: CLOSURE PLAN NEEDS TO ADDRESS DISPOSAL OF DRUMS & ALSO SURFACE SOIL SAMPLING & POSSIBLE DISPOSAL IF REQUIRED. DISCUSSED WITH JOHN PERRIN.

TEXAS DEPARTMENT OF HEALTH
BUREAU OF SOLID WASTE MANAGEMENT
HAZARDOUS WASTE INSPECTION REPORT

PART IV (con't)

Inspection Date 3-16-84

Entity Name DIXIE PETRO-CHEM, INC.

TDH Permit/File # 67032

yes/no

2. Has closure plan been amended? YES

If yes, explain: AS SUBMITTED WITH PART "B"

3. Does owner/operator have an up-to-date post-closure plan? NA

If no, explain:

4. Has post-closure plan been amended? NA

If yes, explain:

u) Financial requirements [325.339]:

1. Does the owner/operator have a current cost of closure estimate for facility? YES

Identify any inadequacies:

2. Has the owner/operator established financial assurance for closure of the facility? YES

3. Which financial assurance option was selected? $10,580.00 LETTER OF CREDIT SHOULD BE ADEQUATE. WAIT UNTIL REVISED CLOSURE ESTIMATE TO SEE IF INCREASED AMT. ON LETTER REQ'D.

4. Does the owner/operator have a current cost estimate for post-closure monitoring and maintenance? NA

Identify any inadequacies:

5. Has the owner/operator established financial assurance for post-closure monitoring and maintenance of the facility? NA

6. Which financial assurance option was selected?

7. Is any owner/operator financial assurance option for closure and/or post-closure to be used for more than one facility? No

If yes, explain:

8. Is the owner/operator financially liable for any claims arising from sudden or nonsudden accidental occurrances? YES

Identify any inadequacies:

TEXAS DEPARTMENT OF HEALTH
BUREAU OF SOLID WASTE MANAGEMENT
HAZARDOUS WASTE INSPECTION REPORT

PART IV (con't)

*Inspection Date 3-16-84

Entity Name DIXIE PETRO-CHEM, INC.

TDH Permit/File # 67032

yes/no

o) Special provisions of TDH hazardous waste Permit No. ________:

Have all special provisions of the permit been met? ______

Identify any discrepancies: ________________________________

p) Permit Application Verification:

Have all Interim Status standards been met for the type of facilities indicated on the permit Application Part A? YES

Identify any discrepancies: ________________________________

Have all Interim Status standards been met for the facilities described in the Permit Application Part B Data Package? YES

Identify any discrepancies: ________________________________

5-16

TEXAS DEPARTMENT OF HEALTH
BUREAU OF SOLID WASTE MANAGEMENT
HAZARDOUS WASTE INSPECTION REPORT

PART IV-SUBPART A-Containers (325.340)

Inspection Date 3-16-84

Entity Name DIXIE PETRO-CHEM, INC.

TDH Permit/File # 67032

yes/no

a) Briefly describe facility's containerized hazardous waste handling operations and procedures and identify container storage area on facility plat (list hazardous wastes stored in e) on last page):

RECEIVE WASTE FROM CUSTOMERS ([illegible]), DECANT WASTE AND PLACE RESIDUE IN DRUMS TO BE STORED UNTIL ≈ 20 ARE ACCUMULATED. DRUMS THEN SENT TO DISPOSAL FACILITY.

b) Container Management:

1. Do the written operating records and/or inspection logs indicate that owner/operator inspections of waste storage containers has resulted in remedial actions because of container physical condition, e.g., transfer of waste to other containers, etc.? — NO

Comments:

2. Did a visual inspection of the waste containers in storage reveal any signs of physical or structural degradation, e.g., rust, corrosion, leaks, bulging, structural damage, extreme heat generation, volitile explosions, fire, fumes, incompatible waste storage, etc.? — NO

If yes, explain (include photos):

3. Are containers compatible with waste stored in them? — YES.

Did review of the written operating record indicate any past incompatibilities between containers and wastes resulting in physical or structural damage to container and subsequent remedial actions? — NO

Explain any evidence of incompatibility of waste and storage containers:

4. Do the waste container handling procedures for the facility require that containers are:

Kept closed during storage? — YES

Carefully handled to prevent rupture or leaking? — YES

Identify any discrepancies:

5. Are periodic inspections of the container storage area and waste containers scheduled and conducted? — YES

Are periodic inspection findings and remedial actions recorded in the written operating record and/or inspection logs of the facility? — YES

Identify any discrepancies:

TEXAS DEPARTMENT OF HEALTH
BUREAU OF SOLID WASTE MANAGEMENT
HAZARDOUS WASTE INSPECTION REPORT

PART IV-Subpart A (con't) Inspection Date 3-16-84

Entity Name DIXIE PETRO-CHEM, INC. TDH Permit/File # 67032 yes/no

6. Is ignitable or reactive waste container storage area at least 50 feet from and inside the facility property line? YES

Identify ignitable or reactive waste storage area on facility plat and record actual measurement (in feet) from property line to waste storage: ≈100 FT. EST.

7. Are the "Special Requirements" for incompatible waste met? NA

Are incompatible wastes placed in the same containers? NA

Are incompatible wastes separated by a barrier? NA

Identify any discrepancies: ______

8. Does the owner/operator written operating record indicate any past incidents of violent reactions occurring while handling these ignitable, reactive, and/or incompatible wastes? NO

If yes, explain: ______

9. Does the facility Closure Plan include proper closure instructions and procedures for the closure of the container storage area? NO *

Does the plan include the cleanup of all waste and residues from the containers and/or containment system of the storage area? NO *

Identify any inadequacies: * STORAGE AREA SAME AS TANK AREA. CLOSURE PLAN NEEDS TO ADDRESS DISPOSAL OF CONTAINERS & CLEANUP OF AREA IF NECESSARY.

c) Is the container storage area provided with a containment system (refer to 325.340(f) for criteria)? YES

Base impervious? YES

Drainage adequate? YES

Capacity sized correctly? YES

Runoff into containment system prevented? YES

Discharge of containment system liquids approved by TDWR? NA

Identify any discrepancies: ______

d) Is facility operation considered to be satisfactory? YES

Improvements since last inspection: ______

TEXAS DEPARTMENT OF HEALTH
BUREAU OF SOLID WASTE MANAGEMEN
HAZARDOUS WASTE INSPECTION REPOR

PART IV-Subpart A (con't)

Inspection Date 3-16-84

Entity Name DIXIE PETRO-CHEM, INC

TDH Permit/File # 67032 yes/no

Comments and Recommendations:

e) List the type and estimated quantity of each hazardous waste and/or mixture of hazardo waste stored or handled in containers on day of inspection:

EPA Haz W# & Code	EPA Substance Name	DOT ID#	Utilized Containers Type	Size	Tot#	DOT Spec.#	Total Accum Qty	REMARKS

Note: 1. DOT Spec.# is container specification # designated for each specific waste as listed in CFR 49, Part 172.101

2. In Remarks column, identify any storage container that is in an unsatisfactory physical conditions e.g., ~~bulging,~~ leaking, corroded, etc.

3. In Remarks column, identify any discrepancies in packaging, marking, labeling, etc., that are found on containers.

TEXAS DEPARTMENT OF HEALTH
BUREAU OF SOLID WASTE MANAGEMENT
HAZARDOUS WASTE INSPECTION REPORT

PART IV-SUBPART B-Tank facilities (325.341)

*Inspection Date 3-16-84

Entity Name DIXIE PETRO-CHEM, INC.

TDH Permit/File # 67032

yes/no

yes/no

a) Briefly describe facility's hazardous waste tank storage and/or treatment processes or operations, and identify tank areas on facility plat (list hazardous waste being stored in g) on last page):

WASTE FROM LINE CLEANOUT GRAVITY DRAINS TO SUMP (OLD UNDERGROUND STORAGE TANK) AND PUMPED TO ABOVEGROUND TANK.

b) Tank utilization:

1. Are all below ground tanks that cannot be entered for inspection, removed from service? YES

If no, identify tank(s) on facilty plat and inquire when tank utilization will be terminated. Comments:

USED AS SUMP. PUMPS TO ABOVE GROUND TANK.

2. Were tank design specifications available for review? YES

If no, explain: SEE "PART B"

3. Are appropriate controls or procedures incorporated to prevent overfilling of tanks? YES

Do all closed storage tanks have pressure relief controls or vents? YES

If no, explain:

4. Are tanks that handle incompatible hazardous wastes protected from accelerated corrosion, erosion or abrasion by having liners, coatings, cathode protection, corrosion inhibitors, etc.? NA

If no, explain:

5. Storage of ignitable, reactive, and/or incompatible wastes:

A. Does the owner/operator meet all the special requirements for ignitable and reactive waste tank storage? YES

For incompatible waste tank storage? NA

Identify any discrepancies:

5-16-84

DIXIE, TRO-CHEM, INC. TDH # 67032

INTERIM STATUS CLOSURE COMPLIANCE REVIEW CHECKLIST

Part V CLOSURE DATA (325.338)

		yes/no
1.	Does the closure plan cover all areas and facilities that were active as of November 19, 1980 (see Part A)?	NO *
2.	Does the plan identify the maximum extent of operation during the life of the facility?	YES
3.	Is the maximum extent of operation estimate exceeded by current operations?	NO
	If yes, explain ______	
4.	Does the maximum extent of operation estimate include the maximum area used for storage and/or treatment?	YES
5.	Is there an estimate of the maximum inventory of wastes in storage or treatment at any time during the life of the facility?	YES
6.	Does the maximum inventory estimate include the maximum amount of on-site wastes requiring treatment, pre-treatment, or disposal?	YES
7.	Does the maximum inventory estimate include the maximum amount of on-site:	
	a. wastes in surface impoundments?	NA
	b. wastes in tanks?	YES
	c. wastes in piles?	NA
	d. wastes in containers?	NO *
	e. contaminated soil and liners from nondisposal surface impoundments?	NA
	f. contaminated soil from around tanks, piles or containers?	NO *
8.	Does the plan discuss the type(s) of testing or other criteria to be used to determine:	
	a. whether soil is contaminated?	NO *
	b. whether decontamination residues are hazardous?	YES
9.	Are incompatible wastes identified and provisions described for keeping them separate during closure?	NA
10.	Does the plan clearly identify the steps to close:	
	a. at any point during the intended operating life? * EXCEPT SOIL & CONTAINERS	YES *
	b. at the end of the operating life? * SAME	YES *
11.	Do the steps to close in the plan include:	
	a. removal of wastes?	YES
	b. treatment of wastes?	NA
	c. waste disposal?	NA
	d. decontamination of equipment and structures?	YES
	e. groundwater monitoring?	NA
12.	With respect to removal, treatment, or disposal of wastes does the plan identify:	
	a. the source and type of material and equipment?	YES
	b. the amount of labor required?	YES
13.	Does the plan describe the decontamination of facility equipment and structures including:	
	a. a list of containers, equipment and structures requiring disposal or decontamination? NOT COMPLETE	YES *
	b. decontamination procedures?	YES
	c. method of treatmnet or disposal of residues?	YES
	d. testing program? SOIL	NO *
14.	With respect to monitoring (if applicable) does the closure plan describe:	
	a. details of the groundwater monitoring program during closure?	NA
	b. maintenance of monitoring equipment during closure?	NA
15.	Does the plan identify the year when final closure is expected to occur?	NO
	What is the expected year of closure? UNKNOWN - NA	

5-21

DIXIE PETRO-CHEM, INC.

5-16-84
TDH # 67032

Part V CLOSURE DATA (con't)

		yes/no
16.	Is there a schedule for final closure activities?	YES
17.	Does the schedule for final closure include:	
	a. the date closure is expected to begin?	~~YES~~ NO
	b. the total time required to close?	YES
	c. the time required for waste inventory treatment?	YES
	d. the time required for waste inventory disposal? MAN HOURS	YES
	e. the time required for decontamination of facility equipment and structures?	YES
18.	Does the schedule for final closure encompass more than 90-days for treatment, removal, or disposal of hazardous waste after receipt of final volume of waste?	NO
19.	Does the schedule for final closure encompass more than 180 days for completion of closure plan activities after receipt of final volume of waste?	NO

COST ESTIMATE CHECKLIST

1.	Is there a written closure cost estimate?	YES *
2.	What is the amount of the closure cost estimate? $10,580.00	
3.	Is there documentation supporting the cost estimate?	YES
	a. workups? IN HOUSE	YES
	b. contractor bids? IN HOUSE	NA
	c. operating history? "	YES
	d. excavation costs? "	NA
	e. hauling and transporter costs? "	YES
	f. disposal costs? "	YES
	g. sampling costs? "	NA
4.	Does the cost estimate cover all the activities in the closure plan including costs of labor?	YES
5.	Does the closure cost estimate cover all required closure activities?	NO*

If "NO," specify in comments below: CLOSURE PLAN DOES NOT INCLUDE DISPOSAL OF DRUMMED WASTE. ALSO DOES NOT INCLUDE SOIL SAMPLING AND POSSIBLE CLEANUP. DISCUSSED WITH JOHN PERRIN

PART IV-Subpart 3 (con't) Inspection Date 3-16-84

Entity Name DIXIE PETRO-CHEM, INC. TDH Permit/File # 67032 yes/no

yes/no

f) Is facility operation considered to be satisfactory? YES

Improvements since last inspection:

Comments and Recommendations: REPAIR OF CONTAINMENT WALL.

g) List the type and estimated quantity of each hazardous waste and/or mixture of hazardous waste stored or handled in tanks on day of inspection:

EPA Haz W# & Code	EPA Substance Name	DOT ID#	Utilized Tank(s)				Total Accum Qty	REMARKS
			Type	Size	Tot#	Spec.#		
D001	WASTEWATER		STEEL	16000	1		-0-	SHIPPED PRIOR TO SURVEY
	CONTAINING			GAL.				
	ORGANICS							

Note: 1. Spec.# is the UPI, Underwriters Lab, ASME, ACI, AWWA, etc., specification # used for tank design and construction.

2. In Remarks column, identify any tank that is in an unsatisfactory physical condition, e.g., leaking, seams split, corroded, etc.

3. Indicate by grouping, materials which are mixed together in same tank.

Noel REGION 7

7HR7

5-24

67035

S1

DW186000115569900 01 5174109 1/6DW186

RECEIVED

JAN 2 - [illegible]

P.H. REGION 7

DW1BL0001151B990001	5400020817DM1B6

REFERENCE 6

Henderson, Robert J., Resources Engineering, Inc., "Closure of Underground Hazardous Waste Storage Tank", presented to the Texas Department of Health, Austin, Texas.

PHR 7

REI

RESOURCE ENGINEERING

July 29, 1985

RECEIVED
AUG 8 1985
PH REGION 7

Mr. Jack C. Carmichael, P.E., Chief
Bureau of Solid Waste Management
Texas Department of Health
1100 West 49th Street
Austin, Texas 78756

#67032

Dear Mr. Mueller:

The attached document describes the actions to be taken in the removal (i.e., closure) of the underground hazardous waste storage tank located at the Dixie Petro Chemical Company facility in Longview, Texas.

Sincerely,

RESOURCE ENGINEERING

Robert J. Henderson

Robert J. Henderson
Project Manager

RJH/jc
Enclosure

cc: Ralph Johnson, Dixie Chemical
John Perrin, Dixie Chemical

1985 JUL 30 PM 1:17

3000 Richmond Avenue, Houston, Texas 77098 • (713) 520-9900

DIXIE PETROCHEMICAL FACILITY
LONGVIEW, TEXAS

CLOSURE OF UNDERGROUND HAZARDOUS WASTE STORAGE TANK

PRESENTED TO

TEXAS DEPARTMENT OF HEALTH
AUSTIN, TEXAS

JULY 26, 1985

334-03

RESOURCE ENGINEERING

3000 RICHMOND AVENUE, HOUSTON, TEXAS 77098, (713) 520-9900

6-2

Table of Contents

Table of Contents (continued)

1.0 INTRODUCTION

The Dixie Chemical Company operates an industrial chemical distribution facility in Longview, Texas. In the past, Dixie has collected various spent cleaning solutions and de minimus product losses in an underground storage tank prior to off-site disposal. Dixie currently is using an above ground storage tank for this purpose and plans to remove the inactive underground tank. This document describes the actions to be taken in removal, (i.e., closure) of the underground hazardous waste storage tank, in accordance with § 325.241 (g) of the Municipal Hazardous Waste Management Regulations (Subchapter L) of the Texas Department of Health (TDH).

2.0 CLOSURE CONCEPTS

The closure plan's objective is the decontamination and removal of one underground liquid waste storage tank. In addition, the structural integrity of the tank will be verified, thus confirming that no leakage from the tank has occurred.

2.1 Equipment Cleaning and Removal - To facilitate storage tank cleaning, the soil above the tank's upper manhead will be removed. The underground storage tank will then be washed using hot water and detergent. The resulting cleaning solutions will be transferred to the above ground hazardous waste storage tank pending disposal. The tank will then be rinsed and a sample taken to verify decontamination. Should contaminant levels above the decontamination objectives be observed, the tank will again be rinsed and the rinsate tested until it meets those objectives.

2.2 Tank Leakage Detection - The possibility of past leakage of material from the tank will be determined by pressure testing the tank prior to its removal. Following cleaning and this integrity verification the tank will be removed and placed in storage pending salvage or disposal.

3.0 WASTE CLASSIFICATION AND MANAGEMENT

The classification and proposed disposition of the various waste materials is described in this section.

3.1 Equipment Cleaning Liquids - The equipment cleaning wastewaters collected in the above-ground tank will be managed as class I hazardous liquid wastes and will be transported off-site for disposal at an approved injection well. It is anticipated that the commercial facility operated by Gibralter Chemical Resources Inc. will be utilized for this purpose, or, as an alternative, another approved facility may be specified. All transportation will be manifested in accordance with TDH and DOT requirements.

3.2 Equipment Cleaning Solids - All waste solids from contaminated equipment cleaning, spent safety equipment and miscellaneous sources will be managed as a Class I hazardous waste. These wastes will be containerized and transported off-site for disposal at an approved land disposal facility and will be manifested in accordance with TDH and DOT requirements.

4.0 DECONTAMINATION OBJECTIVES

Appropriate criteria have been established for the decontamination and integrity verification of the underground tank. A description of these objectives and procedures are as follows:

4.1 Equipment Decontamination Objectives - Decontamination of the tank will be verified by the analysis of a sample of the final rinse water. Decontamination will be complete if the following objectives are met:

Table 1

Equipment Decontamination Objectives

Parameter	Maximum Concentration (mg/l)
Total Organic Carbon	10
pH	between 6.0 and 9.0

4.2 Tank Integrity Verification - Following cleaning, the storage tank will be pressure checked to verify the absence of leaks. Compressed nitrogen will be used to pressurize the tank to 5 psig. The nitrogen source will then be disconnected and the tank's pressure observed for a three hour period. The tank will be deemed leak free if the pressure remains at 5 psig ± 0.5. This pressure is widely used in industry for integrity verification of underground mild steel and fiberglass tanks. It is also over 60% greater than the theoretical maximum of 3.1 psig found in an 8 ft. diameter tank filled with a liquid exhibiting a specific gravity of 0.9.

5.0 MISCELLANEOUS PROCEDURES

In addition to the proposed plans contained within the previous sections, the following procedures will be utilized during closure:

5.1 Atmospheric Considerations - All excavated soil and the tank excavation will be tarped when not in active use to minimize the erosional effects of wind and rain. Upon verification that no tank leaks have occurred, site restoration will be conducted immediately as further discussed in later sections.

5.2 Equipment Decontamination - Upon completion of the tank cleaning activities, equipment which contacted the waste will be cleaned. This will be accomplished by manual removal of contaminated materials and placement in a storage drum (for solids) or the bulk tank (for liquids) pending disposal as a Class I hazardous waste in accordance with Section 3.2.

5.3 Supervision/Monitoring - Technical representatives of Resource Engineering will be on-site during all phases of the field operations to monitor equipment and soil removal, and fill materials placement. A field log will be maintained, documenting all closure activities in accordance with this plan.

5.4 Verification/Certification - Upon completion of the decontamination and structural integrity verification objectives, a Registered Professional Engineer will certify that closure has been completed in accordance with the approved plan. All data developed during the closure program will be compiled into a verification report and submitted to the TDH along with this certification.

5.5 Site Restoration - Upon completion of certification, the excavation will be backfilled with clean fill and released for unrestricted future use.

6.0 SAFETY PLAN

This site safety plan addresses the minimum safety requirements for performing the field work associated with this closure plan.

6.1 Site Safety Officer - For the duration of field work activities, the representative of Resource Engineering will be assigned the duties of the site safety officer. The duties of the site safety officer are as follows:

- o Implement all provisions of the safety plan.
- o Monitor the atmosphere in the vicinity of field personnel.
- o Amend field safety procedures and equipment based upon monitoring data and field conditions.

6.2 Safety Training - All persons participating in field activities will be provided on-site training in the use of the required protective equipment and safety practices to be followed during the project. This training will be conducted prior to field work and will be repeated on an as needed basis during the project.

6.3 General Safety Procedures - Three types of work are included in the scope of this project:

- o Hot water detergent cleaning of the tank.
- o Excavation and removal of the storage tank.
- o Pressure testing the tank.

Different safety precautions will be required for the activities scheduled at the site. The hot water detergent cleaning of the tank will require more restrictive safety precautions than the remaining work, as indicated.

6.3.1 Tank Cleaning - Protective equipment required for the inspection and cleaning of the tank is as follows:

A. Respiratory Protection

- o Airline or SCBA (when entering tanks, if necessary)
- o Full face respirator with GMC cartridges

B. Protective Clothing

- o Polylaminated Tyvek with hood
- o Neoprene boots
- o Neoprene gloves
- o Hard hat

6.3.2 Excavation and Pressure Testing Work - Protective equipment for personnel in direct contact with the tasks during this work is as follows:

- o Standard Tyvek
- o Neoprene boots
- o Hard hat
- o Safety glasses
- o Comfo II respirator (available)

The protective equipment required can be modified by the site safety officer depending upon field conditions and the results of real-time monitoring. Workers will remove protective clothing at the end of each day and dispose of it in receptacles on-site. These will be disposed of as a Class I waste in accordance with Section 3.2.

REFERENCE 7

Wayne Penick, DPC Industries, Inc., Letter to Keith Westberry, Fluor Daniel, Inc., Concerning Dixie (TEI) Petro-Chemical.

DPC INDUSTRIES, INC.
P.O. Box 24600
Houston, Texas 77229-4600
(713) 457-4888
FAX (713) 457-4807

April 20, 1993

Mr. Keith Westberry
Fluor Daniel, Inc.
12790 Merit, Suite 200
Dallas, TX 75251

RE: DPC Industries, Inc., EPA Site Inspection,
Gum Springs Road, Longview, Texas

Dear Mr. Westberry:

I have included with this letter a legal description which was taken from our current lease agreement with McConway & Torley Corporation. The exposed tank behind the warehouse is a septic tank. If you look on your drawing, it appears the tank was placed on the west side instead of the south side of the warehouse. The office building was never constructed. This would account for the location of the septic tank. A fuel tank was removed from the south side of the warehouse. There was only one tank at this location. I was not able to find out who owns the warehouse next to our site.

If you should require additional information please contact me at (713) 457-4821.

Sincerely,

DPC Industries, Inc.

Wayne Penick

Wayne L. Penick
Sr. Environmental Specialist

LVGUM932

Wayne Renick

J. WESLEY DOWLING & ASSOCIATES, INC.
STANDARD-FORM LEASE AGREEMENT

J.W.D. FILE NO. LONGVIEW, TEXAS

For references purposes only, this Lease Agreement is hereby dated MARCH 8, 19 91, and is hereinafter referred to as the "Agreement," and is hereby entered into by and between:

DIXIE CHEMICAL COMPANY, INC.

hereinafter referred to as "Lessor," and:

McCONWAY & TORLEY CORPORATION

hereinafter referred to as "Lessee." Lessee shall occupy the leased premises during the Lease Term under the trade name of:

McCONWAY & TORLEY CORPORATION

unless and until changed by Lessee at a later date.

W I T N E S S E T H:

1. LEASED PREMISES: Lessor, for and in consideration of the rents, covenants, and agreements to be paid, kept and performed by Lessee, by these presents does hereby lease to Lessee; and Lessee does hereby take and lease from Lessor, subject to the terms, covenants, and agreements hereinafter expressed, the following described property which is hereinafter referred to as the "Premises" and includes all buildings, fixtures and improvements located thereon:
Beginning at a 5/8" inch iron rod in the west row of Gum Springs Road, said beginning point being the southeast corner of said 5.24 acre tract; Thence west 453.7 feet along the SBL of said 5.24 acre tract to a 3/8 inch iron rod for corner; thence north 0 DEG 14 MIN east 248.2 feet along a fence on the EBL of trailer park to a 1/2 inch iron pipe for corner: thence west 116.8 feet along the NBL of said trailer park to a point in same for corner; thence north 289.3 feet to a point for corner, same being the northwest corner at tanks; thence south 89 D 16 MIN east 192.8 feet to a point in the west row line of Gum Springs Road for corner: thence south 35 DEG 14 MIN east 64.7 feet and south 35 DEG 08 MIN east 589.6 feet along the west row

REFERENCE 8

Broom, Matthew E. & B.N. Myers, U.S. Geological Survey, Report No. 27, "Ground Water Resources of Gregg and Upshur Counties, Texas.

Ernest T. Baker, Jr.

TEXAS
WATER
DEVELOPMENT
BOARD

Report 101

GROUND-WATER RESOURCES OF GREGG AND UPSHUR COUNTIES, TEXAS

OCTOBER 1969

8-1

TEXAS WATER DEVELOPMENT BOARD

REPORT 101

GROUND-WATER RESOURCES OF GREGG AND UPSHUR COUNTIES, TEXAS

By

Matthew E. Broom
United States Geological Survey

Prepared by the U.S. Geological Survey
in cooperation with the
Texas Water Development Board

October 1969

8-2

GROUND-WATER RESOURCES OF GREGG AND UPSHUR COUNTIES, TEXAS

ABSTRACT

Gregg and Upshur Counties, in northeast Texas, are underlain by two aquifers that are capable of sustaining additional development. The aquifers consist of the Wilcox Group and Carrizo Sand (Carrizo-Wilcox aquifer) and the Queen City Sand.

The Carrizo-Wilcox aquifer, the most productive of the two aquifers, underlies all of the 2-county area at increasingly greater depths toward the trough (East Texas Embayment) that trends northeasterly through the east-central part of Upshur County. Of the total pumpage of 3.02 mgd (million gallons per day) in 1966, 2.84 mgd was from the Carrizo-Wilcox aquifer. At the 1966 hydraulic gradient (8 feet per mile), about 12,000 acre-feet per year (10.9 mgd) was being transmitted through this aquifer. The amount that is perennially available is not known, but it is probably at least two times that pumped in 1966. In addition, 45 million acre-feet of fresh to slightly saline water is in transient storage in the Carrizo-Wilcox aquifer; however, much of this lies at a depth of more than 400 feet. The water in the Carrizo-Wilcox generally is soft, but the high chloride content in parts of Upshur and most of Gregg County may limit development of the ground-water supplies in the aquifer, particularly for municipal and domestic uses.

The Queen City Sand, which crops out over nearly 90 percent of the area, is relatively undeveloped. In 1966, only 200 acre-feet (0.18 mgd) was pumped from the aquifer. At the 1966 hydraulic gradient of 8 feet per mile, 2.4 mgd, or 2,700 acre-feet per year, was being transmitted through the aquifer. An estimated 25 million acre-feet of fresh water is in transient storage, of which 8 million acre-feet theoretically would be available from storage. Development of even half of this quantity would require a large number of small-capacity wells because of the low transmissibility of the aquifer, about 5,000 gpd (gallons per day) per foot as compared to 20,000 gpd per foot for the Carrizo-Wilcox. The water in the Queen City Sand is uniformly low in mineralization except for iron; because of iron content, the Queen City Sand may be less desirable as a source of water for municipal, industrial, and domestic uses than the Carrizo-Wilcox aquifer. However, the iron can be substantially removed with proper treatment.

GROUND-WATER RESOURCES OF GREGG AND UPSHUR COUNTIES, TEXAS

INTRODUCTION

Location and Extent of the Area

Gregg and Upshur Counties in northeast Texas are bordered by Camp County on the north, Harrison, Marion, and Morris Counties on the east, Rusk County on the south, Smith County on the southwest, and Wood County on the west (Figure 1). The city of Longview (Gregg County), the principal center of commerce and industry in the area, is 130 miles east of Dallas and 60 miles west of Shreveport, Louisiana.

Figure 1.—Location of Gregg and Upshur Counties

The two counties comprise an area of 870 square miles, of which 284 are in Gregg County and 586 are in Upshur County.

Purpose and Scope

This is a report of a detailed investigation of the ground-water resources of Gregg and Upshur Counties begun in 1966 by the U.S. Geological Survey in cooperation with the Texas Water Development Board. The purpose of this report is to provide a guide for the optimum development of available ground-water resources in the report area.

Data are presented to show the vertical and lateral extent of the water-bearing formations or aquifers, the hydrologic properties of the aquifers, and the chemical quality of water in the aquifers. The report gives the quantities and uses of the ground water being withdrawn and the effects of these withdrawals on water levels. Problems associated with ground-water development are discussed, and estimates are given on ground water that is available for future development.

Methods of Investigation

The field data were collected mostly during the period from July 1966 to January 1967. Basic information, including depths of wells, water levels, methods of well construction and water lift, yield characteristics, and use of water, was collected for 157 wells. Information previously collected by the Texas Water Development Board and the U.S. Geological Survey was brought up-to-date. Well records are shown in Table 7 and well locations are shown on Figure 13.

Static water levels were measured with steel tape in 84 wells (Table 7). Altitudes not previously established at well sites were interpolated from Geological Survey 7½- and 15-minute topographic quadrangle maps (contour intervals 10 and 20 feet).

Ground-water samples were collected for chemical analysis from 66 wells and the results are shown in Table 9. Table 9 also includes analyses that were made previous to the present investigation.

Quantities of ground water pumped for public and industrial use (Table 4) were obtained largely from records. Quantities for domestic, livestock, and irrigation use were estimated from the number of users and normal rates of use.

The geologic map (Figure 2) is from the Geologic Atlas of Texas, Tyler Sheet (University of Texas, Bureau of Economic Geology, 1964).

Subsurface control for the geologic sections (Figures 14, 15, and 16), for the maps showing the altitudes of and depths to the top or base of the aquifers (Figures 4 and 5), and for maps showing the approximate sand thickness of the aquifers (Figures 11 and 12) were determined from electrical logs of oil, gas, and water tests. Additional subsurface information was provided by drillers' logs of wells, a representative number of which are given in Table 8.

Aquifer tests (Table 3) were analyzed by the Theis non-equilibrium method as modified by Cooper and Jacob (1946) and the Theis recovery method (Wenzel, 1942).

Previous Investigations

Deussen (1914), in his report on the geology and underground waters of the southeastern part of the Texas Coastal Plain, included a brief account of ground-water sources and development in Gregg and Upshur Counties. The geology of the report area was described in a report by Sellards and others (1932) on the regional geology of Texas.

Shafer and Lyle (1937) made an inventory of wells in Gregg County; a supplement to this inventory was made by Broadhurst (1943). Broadhurst (1942) made an inventory of wells in Upshur County. Broadhurst and Breeding (1945) reported on ground-water development and stream runoff in Gregg County. Sundstrom and others (1948), in a report on the public water supplies of East Texas, included information on the water supplies at Big Sandy and Gilmer in Upshur County, and Gladewater, Kilgore, and Longview in Gregg County.

Baker and others (1963) gave information on the aquifers in their ground-water reconnaissance report. Holloway (1964) reported on an alleged ground-water contamination case near Kilgore in Gregg County. Hughes and Leifeste (1965) gave information on the quality of surface water in their reconnaissance study of the chemical quality of surface water in the Sabine River basin.

Detailed ground-water investigations in counties adjacent to the report area have been made in Smith County (Dillard, 1963); Camp, Franklin, Morris, and Titus Counties (Broom and others, 1965); Harrison County (Broadhurst and Breeding, 1943b, and Broom and Myers, 1966); Marion County (Broadhurst and Breeding, 1943a); and Wood County (Broom, 1968). Smith and others (1966) made detailed base-flow studies of Little Cypress Creek along its reaches extending through Upshur, Gregg, and Harrison Counties.

Physiography and Climate

Gregg and Upshur Counties are in the West Gulf Coastal Plain physiographic province (Fenneman, 1938). The land surface, which slopes generally southeastward, supports a substantial growth of pine and hardwood. The area is drained in the northern half mostly by Little Cypress Creek and its tributaries, and in the southern half mostly by the Sabine River and its tributaries. Except for the relatively level flood plains of the principal streams, the terrain is gently rolling to hilly. Altitudes range from about 680 feet on the Little Cypress-Sabine drainage divide to about 240 feet along the downstream reaches of the Sabine River.

The U.S. Geological Survey maintains four stream-gaging stations in the area. The locations of the gaging stations are shown on Figure 13. Gaging-station data (U.S. Geological Survey, 1967) are summarized in the following table:

STREAM-GAGING STATION	DRAINAGE AREA (SQ MI)	AVERAGE DISCHARGE		
		YEARS OF RECORD	CUBIC FEET PER SECOND	ACRE-FEET PER YEAR
Sabine River near Gladewater* 8-0200	2,791	34	1,882	1,363,000
Big Sandy Creek near Big Sandy 8-0195	231	27	183	132,500
Little Cypress Creek near Ore City 7-3460.5	383	4	†	†
Rabbit Creek at Kilgore 8-0207	75.8	3	†	†

* Since October 1960, flow of the Sabine River at the Gladewater station has been affected by storage in and diversion from Lake Tawakoni near Wills Point, capacity, 936,200 acre-feet. In 1966, the city of Dallas diverted 29,950 acre-feet from Lake Tawakoni for municipal use.

† Average discharges are not given at stations having fewer than 5 years of complete record. During the time of available record, discharge at the Little Cypress Creek station ranged from 23,500 cfs (cubic feet per second) on April 24, 1966, to no flow at times; discharge at the Rabbit Creek station ranged from 15,200 cfs on April 24, 1966, to no flow at times in 1964.

The records of the U.S. Weather Bureau at Longview from 1889 to present provide the most complete climatological data for the area. The normal annual precipitation at Longview is 46.16 inches; and the normal monthly precipitation, in inches, is as follows:

January	4.27	May	5.67	September	2.62
February	3.76	June	3.36	October	3.07
March	3.84	July	3.52	November	4.12
April	4.79	August	2.56	December	4.58

The normal January temperature is 9°C (47.7°F), and the normal July temperature is 29°C (84.2°F). The average date of the first killing frost is November 16 and the last is March 14. The average growing season is 250 days.

The annual gross lake surface evaporation in the report area during the period 1940-65 ranged from 38.0 inches in 1950, 1957, 1958, and 1959 to 57.0 inches in 1954 and averaged 44.5 inches (Kane, 1967, table E-13).

Population and Economy

The U.S. Bureau of the Census (1960) shows a population of 69,436 for Gregg County and 19,793 for Upshur County. The estimated population in 1965 of principal cities in Gregg County was: Longview (county seat), 45,100; Kilgore, 11,200; and Gladewater, 6,142. The estimated population in 1965 of principal cities in Upshur County was: Gilmer (county seat), 4,560; Big Sandy, 848; and Ore City, 819.

The economy of the area is based on industry and agriculture. However, most of the industry is located in Gregg County and most agriculture is located in Upshur County. This uneven distribution is due largely to the East Texas oil field, which extends through a substantial part of Gregg County, including the cities of Kilgore and Gladewater, but is present only in the southernmost part of Upshur County.

Industry in Gregg County is the production and processing of petroleum and related products. The production of oil in Gregg County in 1965 was 24,932,500 barrels, and the cumulative production to 1965 since oil was discovered in 1931 was 2,042,105,500 barrels (Railroad Commission of Texas, 1966). Less important industries in Gregg County include the manufacture of machinery, chemicals, and plastics. A very recent industry to locate in the county was a brewery at Longview. Agriculture in Gregg County is mostly limited to beef cattle and nursery products.

Industry in Upshur County, though localized, is chiefly the production of oil in the southern part and some production of gas in the east-central part of the county. The production of oil in Upshur County in 1965 was 3,104,000 barrels, and the cumulative production in 1965 since oil was discovered in 1931 was 229,639,000 barrels. Less important industries in Upshur County include the production of steel conduits, lumber, pulp wood, pottery, and sand.

Agriculture is widespread in Upshur County and has evolved in recent years from predominately row-crop farming to inproved pastures and livestock. Beef cattle and poultry production provide most of the farm income. Other elements of the agricultural economy are dairy products, peach orchards, and truck crops.

Well-Numbering System

The well-numbering system used in this report is based on the divisions of latitude and longitude and was developed by the Texas Water Development Board for use throughout the State. Under this system, each 1-degree quadrangle is given a number consisting of two digits from 01 to 89. These are the first two digits in the well number. Each 1-degree quadrangle is divided into 7½-minute quadrangles which are given 2-digit numbers from 01 to 64. These are the third and fourth digits of the well number. Each 7½-minute quadrangle is subdivided into 2½-minute quadrangles which are given a single digit number from 1 to 9. This is the fifth digit of the well number. Finally, each well within a 2½-minute quadrangle is given a 2-digit number in the order in which it was inventoried, starting with 01. These are the last two digits of the well number.

Only the last three digits of the well number are shown at the location of a well on Figure 13; the second two digits are shown in the northwest corner of each 7½-minute quadrangle; and the first two digits are shown by the large block numerals 34 and 35.

In addition to the 7-digit well number, a 2-letter prefix is used to indentify the county. The letter prefix for Gregg County is KU, and for Upshur County it is YK. Thus, well YK-35-17-201 (a well for the city of Gilmer) is in Upshur County (YK), in the 1-degree quadrangle 35, in the 7½-minute quadrangle 17, in the 2½-minute quadrangle 2, and was the first (01) well inventoried in that 2½-minute quadrangle (Figure 13).

The well numbers used by the authors of previous reports and the corresponding numbers used in this report are given in Table 1.

Acknowledgments

The investigation was achieved largely through the cooperation of well owners and county, city, and industrial officials who allowed access to their property and permitted examination of pertinent records. Most of the data shown on the maps and cross sections in this report was obtained from the electrical logs of oil and gas tests.

8-6

Table 1.—Well Numbers Used by Shafer and Lyle (1937), Broadhurst (1943), and Broadhurst and Breeding (1945) in Gregg County and Corresponding Numbers Used in This Report; Well Numbers Used by Broadhurst (1942) in Upshur County and Corresponding Numbers Used in This Report

OLD NUMBER	NEW NUMBER	OLD NUMBER	NEW NUMBER	OLD NUMBER	NEW NUMBER
		Gregg County (KU)			
411	35-33-201	607	35-35-401	679	35-34-201
468	35-34-702	641	35-25-801	698	35-33-903
469	35-33-901	654	35-26-703	699	35-34-403
470	35-33-902	656	35-26-704	700	35-34-401
471	35-41-303	658	35-26-705	703	35-34-703
476	35-33-904	663	35-26-709	705	35-35-701
525	35-34-503	664	35-26-502		
		Upshur County (YK)			
12	35-17-201	49	35-25-501	66	34-23-601
14	35-17-202	54	35-18-701	68	34-32-402
15	35-17-203	62	35-17-701	75	35-25-401
33	35-18-201	63	34-24-901		

GEOLOGY AS RELATED TO GROUND WATER

Stratigraphy and Structure

Geologic units of Eocene age are the principal sources of ground water in Gregg and Upshur Counties. Alluvium of Pleistocene and Holocene age yield only small quantities of ground water. The geologic units and their water-bearing characteristics are summarized in Table 2. The outcrop areas of the geologic units are shown on Figure 2.

The Queen City Sand forms the most extensive outcrop in the area. With local exceptions, the units below the Queen City Sand crop out in northeasterly trending belts that extend both north and south of Gregg and Upshur Counties. Eocene units above the Queen City are very limited in extent and occur mostly as outliers across central parts of the area. The wider belts of alluvium are along the principal streams.

The geologic sections (Figures 14, 15, and 16) show the stratigraphic relationships of the units in the subsurface. The contacts between the units often are difficult to determine on drillers' and electrical logs; consequently, the contacts shown on the geologic sections and the thickness of the units shown on Table 2 are only approximate. The top of the Midway Group defines the approximate base of fresh to slightly saline water in the two-county area. The altitude and depth to the top of the Midway are shown in Figure 3. The Wilcox Group, the lowermost fresh water-bearing unit, comprises nearly half the available water-bearing sediments. The sediments above the Wilcox Group, except the alluvium, are assigned to the Claiborne Group which is divided in ascending order into the Carrizo Sand, Reklaw Formation, Queen City Sand, Weches Greensand, and Sparta Sand.

The major structural feature in the area is a trough-like depression whose long axis nearly coincides with a line extending from the northwest corner of Gregg County to the northeast corner of Upshur County. Southeast of the line the units generally dip northwest, and northwest of the line the units generally dip southeast, both towards the long axis (Figures 3 and 14) at about 15 feet per mile. The report area is part of an extensive area of downwarping which in its entirety is called the East Texas Embayment.

The trough or embayment is shown by the contours on the top of the Midway Group in Figure 3. The general pattern is locally altered in the western part of Upshur County by a south-plunging structural ridge which passes through the community of Kelsey. This structural ridge brings the Carrizo Sand and Reklaw Formation to the surface west and northwest of Gilmer (Figure 2). West of the structural ridge, the Midway

Table 2.—Geologic Units and Their Water-Bearing Characteristics, Gregg and Upshur Counties

SYSTEM	SERIES	GROUP	UNIT	APPROXIMATE MAXIMUM THICKNESS (FT)	CHARACTER OF ROCKS	WATER-BEARING PROPERTIES
Quaternary	Holocene and Pleistocene		Alluvium	60	Sand, silt, clay, and some gravel.	Not known to yield water to wells in Gregg and Upshur Counties; probably would yield small quantities.
Tertiary	Eocene	Claiborne	Sparta Sand	250	Sand, silt, and clay.	Known to yield only small quantities of fresh water to wells in Gregg and Upshur Counties.
			Weches Greensand	75	Glauconite, glauconitic clay, and sand; secondary deposits of limonite common in outcrop areas.	Not known to yield water to wells in Gregg and Upshur Counties.
			Queen City Sand	500	Sand, silt, clay, and some lignite.	Yields small to moderate quantities of fresh water to wells in Gregg and Upshur Counties.
			Reklaw Formation	110	Glauconitic clay and some sand and lignite; limonite is common in outcrop areas.	Not known to yield water to wells in Gregg and Upshur Counties.
			Carrizo Sand	150	Sand, silt, and clay.	Yields moderate to large quantites of fresh to slightly saline water to wells in Gregg and Upshur Counties.
		Wilcox		600	Sand, silt, clay, lignite, and limonite sand beds generally thin-bedded and discontinuous.	Yields moderate to large quantities of fresh to slightly saline water to wells in Gregg and Upshur Counties.
	Paleocene	Midway		880	Calcareous clay and minor amounts of limestone, silt, and glauconitic sand.	Yields no water to wells in Gregg and Upshur Counties.

8-8

Group and the younger units dip to the southwest at about 130 feet per mile.

No faults are known to have been mapped in the area. Deep-seated faults have been mapped in the Hawkins oil field in Wood County, but displacement along these faults decreases upward so that little or no displacement of the rocks occurs above the Midway Group.

Physical Characteristics and Water-Bearing Properties of the Geologic Units

Midway Group

The Midway Group crops out in counties northwest of Gregg and Upshur Counties. The unit, mostly marine in origin, is composed chiefly of calcareous clay which locally may contain thin stringers of limestone and glauconitic sand. The unit tends to become silty and slightly sandy in the upper part of the section.

The top of the Midway (Figure 3) ranges in altitude from about 300 feet below sea level (700 feet below land surface) in the northwestern and southeastern corners of the area to about 1,100 feet below sea level (1,500 feet below land surface) in the southwestern corner of Upshur County. The Midway Group is about 880 feet thick in the report area.

The Midway is not known to yield water to wells in the area. Nevertheless, it is hydrologically signifcant in that it forms the basal confining rock for the overlying Wilcox Group.

Wilcox Group

The Wilcox Group conformably overlies the Midway and crops out northwest and southeast of the report area. The unit has a maximum thickness of about 600 feet and is composed of interbedded sand, silt, clay, and some lignite with secondary deposits of limonite. Medium to very fine sand generally constitutes one-third to one-half of the unit. Individual beds of sand generally are thin bedded and discontinuous, although some may attain a thickness of nearly 100 feet (well YK-35-19-401, Figure 16). The geologic sections (Figures 14, 15, and 16) clearly show that few beds of sand in the Wilcox can be correlated from well to well. Also, because of the transitional change between the relatively sandy Wilcox and relatively clayey Midway, the stratigraphy of the Wilcox in some places is somewhat questionable as determined only from electrical logs. In fact, locally, the lowest practicable water sands in the Wilcox may exist as much as 200 feet above the actual base of the Wilcox. In order to maintain stratigraphic continuity as much as possible in this investigation, the base of the Wilcox was placed on occasion to include some silty sands which might, for practical purposes, be included in the Midway Group.

Because of the lenticularity of the sand beds, the yields of wells tapping the Wilcox can be expected to range over fairly wide limits. Most of the wells currently in use only partially penetrate the Wilcox. However, the Wilcox may be capable of yielding as much as 500 gpm (gallons per minute) or more if all sands in the unit are screened.

Claiborne Group

Carrizo Sand

The Carrizo Sand unconformably overlies the Wilcox Group and crops out in small areas in the northwestern and southeastern parts of the report area (Figure 2). The Carrizo reaches a maximum thickness of about 150 feet, and typically the unit is composed of massive to cross-bedded, coarse to fine sand. In places, however, the Carrizo is interbedded with silt and clay so that it is not easily distinguishable from the underlying Wilcox Group (well YK-34-32-601, Figure 15).

Most of the wells in use are multiscreened to tap both the Carrizo Sand and the Wilcox Group. The yields of these wells range from about 300 to 600 gpm, and in most wells, the Carrizo is believed to contribute most of the water. Locally, the Carrizo probably is capable of yielding as much as 500 gpm to wells.

Reklaw Formation

The Reklaw Formation conformably overlies the Carrizo Sand and crops out in small areas in the northwestern and southeastern parts of the report area (Figure 2). In the latter area, however, subsurface data indicate that a part of the sediments mapped as Reklaw (Figure 2) actually may be of Queen City age. The formation has a maximum thickness of about 110 feet, and typically it is composed of glauconitic clay and minor amounts of sand and lignite. Locally the Reklaw may show an apparent increase in sand content, particularly in the north and northeastern parts of the area (well YK-35-11-701, Figure 16). However, the apparent increase in sand content may result from a thinning of the Reklaw, the additional sand being part of the overlying Queen City Sand.

The outcrop of the Reklaw is easily recognized because of its red clayey soil, which is in sharp contrast to the gray sandy soil of the underlying Carrizo Sand. Also, the outcrop is characterized by the occurrence of limonitic seams and concretions (ironstone) at or near the land surface.

The Reklaw Formation is not definitely known to yield water to any wells in the area, but it probably would yield small quantities to wells where the unit is locally sandy. It is significant hydraulically as a confining bed above the underlying Carrizo Sand.

Queen City Sand

The Queen City Sand conformably overlies the Reklaw Formation and crops out over 90 percent of Gregg and Upshur Counties (Figure 2). In contrast to the red clayey soil and the more gentle relief on the Reklaw, the outcrop of the Queen City is composed of gray sandy soil, and the relief ranges from moderate to hilly. Pine timber and perennial streams are more prevalent on the outcrop of the Queen City than on outcrops of the older units. The Queen City consists of massive to cross-bedded sediments, locally stratified. The sediments generally consist of about 80 percent medium to fine sand and about 20 percent silt and clay, with minor amounts of lignite. The Queen City has a maximum thickness of about 500 feet in the southwestern corner of Upshur County. In general, wells in the Queen City are capable of furnishing small to moderate quantities of fresh water.

Weches Greensand and Sparta Sand

The Weches Greensand and Sparta Sand have a very limited extent in Gregg and Upshur Counties. They crop out as scattered outliers having relatively sharp relief across the central part of the area (Figure 2).

The Weches Greensand attains a thickness of 75 feet and consists of interbedded glauconitic clay and sand. At the shallow depths and in outcrops the unit locally contains enough secondary deposits of limonite to make it a durable caprock. Consequently, a very hilly terrain is characteristic of the Weches outcrop. The formation is not known to yield water to wells in the report area.

The overlying Sparta Sand attains a thickness of 250 feet in the southwestern corner of Upshur County and generally consists of about 70 percent medium to fine sand and about 30 percent sandy clay and silt. The Sparta outcrops generally are excellent infiltration areas. Although the unit is known to yield only small quantities of fresh water to wells, water from springs at the base of the Sparta outcrop makes a significant contribution to the base flow of Big Sandy Creek.

Alluvium

Alluvial sediments occur in and near the floodplains of the principal streams (Figure 2). The sediments have a maximum thickness of about 60 feet, and generally consist of clay, silt, fine sand, and minor amounts of gravel. The alluvium is not known to yield water to wells, but it probably is capable of yielding at least small quantities of water.

HYDROLOGIC UNITS

The Wilcox Group, Carrizo Sand, and Queen City Sand constitute the significant water-bearing units in Gregg and Upshur Counties. The first two formations have similar hydrologic properties and are in hydraulic continuity. Consequently, they function as a single aquifer, which, for purposes of this report, is referred to as the Carrizo-Wilcox aquifer.

The Carrizo-Wilcox aquifer crops out between Longview and Kilgore in Gregg County and northwest of Gilmer in Upshur County. In the subsurface, the aquifer dips toward the northeasterly-trending trough (the East Texas Embayment) at about 15 feet per mile (Figure 4). In the southwestern part of Upshur County, the Carrizo-Wilcox dips steeply (about 130 feet per mile) southwest toward the Tyler Basin in Smith County.

The altitude of the top of the Carrizo-Wilcox aquifer (Figure 4) ranges from about 300 feet above sea level (near the outcrop areas) in the northwestern corner of Upshur County and in the southeastern corner of Gregg County, to nearly 500 feet below sea level (900 feet below land surface) in the southwestern corner of Upshur County. The Carrizo-Wilcox in Gregg and Upshur Counties has an average thickness of about 600 feet.

The Queen City Sand, the second most important aquifer, crops out over 90 percent of the area or about 840 square miles. The formation is absent along Little Cypress and Kelsey Creeks, a few miles west of Gilmer, and along the Sabine River south of Longview (Figure 2). The base of the aquifer dips generally toward the trough (the East Texas Embayment) at a rate approximately equal to the dip of the top of the Carrizo-Wilcox aquifer (Figure 5). The thickness of the aquifer, which in most places is about equivalent to the depth to the base of the aquifer shown on Figure 5, ranges from a few feet to about 500 feet.

GROUND-WATER HYDROLOGY

Occurrence and Movement of Ground Water

Ground water in the Carrizo-Wilcox aquifer and the Queen City Sand occurs under artesian and water-table conditions in Gregg and Upshur Counties. Under water-table conditions, the water is unconfined and when tapped by wells, the water does not rise in the wells above the zone of saturation in the aquifer. Under artesian conditions, the water is confined and when tapped by wells, the water rises in the wells under hydrostatic pressure to a level above the top of the aquifer. If the pressure head is large enough to cause the water in the well to rise to an altitude greater than that of the land surface, the well will flow. The level to which water will rise in artesian wells is called the piezometric surface.

The Carrizo-Wilcox aquifer yields water under artesian conditions in Gregg and Upshur Counties, except in the outcrop area of the Carrizo where the water is unconfined. Water in the Queen City is unconfined except in the southwestern and northeastern parts of Upshur County where the overlying Weches Greensand effectively confines the water.

Ground water moves slowly (tens to hundreds of feet per year) from areas of recharge to areas of discharge. The direction of movement of the water in the Carrizo-Wilcox aquifer is shown in Figure 6. The contours show that the ground water moves generally toward the center of the trough where, coincidentally, large or concentrated withdrawals have formed general cones of depression in the piezometric surface. The slope of the piezometric surface across the 250 foot contour line (Figure 6) averages about 8 feet per mile.

The movement of water in the Queen City Sand, as indicated by the water-table map (Figure 7), generally is toward the larger streams. Because of the low hydraulic gradient (8 feet per mile), the rate of movement is slow, perhaps only a few hundred feet per year.

Recharge and Discharge

Ground water in the Carrizo-Wilcox aquifer and the Queen City Sand is derived from the infiltration of precipitation on the outcrop areas, from runoff en route to a watercourse, and from the infiltration of water from streams and lakes. The recharge areas of the Carrizo-Wilcox lie mostly in adjacent counties to the northwest and southeast. Those of the Queen City are in Gregg and Upshur Counties and in adjacent counties to the north and west.

A number of factors govern the rate of natural recharge, the most important of which are: (1) the type of soil in the outcrop areas; (2) the duration and intensity of rainfall; (3) the slope of the land surface; (4) the presence of vegetational cover; and (5) the depth of the water table.

Recharge to the Carrizo-Wilcox aquifer could not be determined from the available data. However, an estimate of the mimimum amount of recharge to the Queen City Sand can be made on the basis of the quantity of water that is being transmitted downdip under a hydraulic gradient (8 feet per mile) that has not been significantly affected by pumping. Thus, recharge is equal to at least 2.4 mgd (million gallons per day) or 2,700 acre-feet of water per year. An additional but undetermined quantity enters the aquifer and moves to the streams where it is discharged as seep and spring flow. The streamflow records of Little Cypress Creek near Ore City, which drains an area of 383 square miles, are insufficient to determine the low flow of the stream, which is sustained by ground water discharged largely from the Queen City Sand.

The water in the two aquifers is discharged both naturally and artificially. The natural discharge is the flow of springs and seeps, evaporation from the water table, and transpiration by trees and plants whose roots reach the water table. The quantity of water discharged by each method is difficult to determine, but it is at least several times the amount discharged by wells. Little water is discharged naturally from the Carrizo-Wilcox aquifer. An unknown, but probably large quantity of water is discharged from the Queen City through springs and seeps and by evapotranspiration. The artificial discharge by wells was 3.02 mgd (about 3,400 acre-feet) from both aquifers in 1966, of which 2.84 mgd was from wells in the Carrizo-Wilcox aquifer.

Hydraulic Properties of the Aquifers

The hydraulic properties of an aquifer that determine its capacity to transmit and store water are expressed as the coefficient of transmissibility and the coefficient of storage. (See definition of terms.)

Pumping tests were made in seven wells tapping the Carrizo-Wilcox aquifer. The results of these tests are shown in Table 3. The coefficients of transmissibility determined from these tests ranged from 3,100 to 11,000 gpd (gallons per day) per foot; discharge rates ranged from 100 to over 800 gpm; and specific capacities ranged from 2.8 to 15.5 gpm per foot of drawdown (Table 3). The range in transmissibility is due to variations in the permeability and thickness of the aquifer sands. None of the wells fully penetrated the aquifer; consequently, the results of the tests generally gave values that are less than those that would have been obtained from wells penetrating the entire aquifer. The coefficients of permeability, which were estimated from the total amount of sand believed to be contributing to the well (in most of the wells it was the equivalent of the amount of screen or perforation in the well), ranged from 41 to 128 gpd per square foot for an average of nearly 80 gpd per square foot. This value is considerably higher than the 50 gpd per square foot determined for the same unit in Wood County (Broom, 1968, p. 14). Thus, where as much as 400 feet of sand is available to the aquifer, the coefficient of transmissibility might be as much as 32,000 gpd per foot. The coefficient of storage obtained from one test was 0.00006. This value is within the range generally attributable to artesian conditions.

8-11

REFERENCE 9

Broom, Matthew E. & B.N. Myers, U.S. Geological Survey, Report No. 27, "Ground Water Resources of Harrison County Texas.

Ernest J. Baker, Jr.

TEXAS
WATER
DEVELOPMENT
BOARD

REPORT 27

GROUND-WATER RESOURCES OF HARRISON COUNTY, TEXAS

AUGUST 1966

9-1

TEXAS WATER DEVELOPMENT BOARD

REPORT 27

GROUND-WATER RESOURCES OF

HARRISON COUNTY, TEXAS

By

M. E. Broom and B. N. Myers
United States Geological Survey

Prepared by the U.S. Geological Survey
in cooperation with the
Texas Water Development Board
and the
Harrison County Commissioners Court

August 1966

4-2

GROUND-WATER RESOURCES OF

HARRISON COUNTY, TEXAS

ABSTRACT

Harrison County is in the northeastern part of Texas and has an area of 892 square miles. Marshall, the county seat, is 40-miles west of Shreveport, 150 miles east of Dallas, and 75 miles south of Texarkana. Most of Harrison County is heavily forested and the surface is hilly to rolling. The average annual precipitation is about 47 inches.

The economy of the county is based chiefly on industry and agriculture. The agricultural economy is based principally on the raising of beef cattle. The principal industries are concerned with the production and processing of oil and gas.

The geologic units that are the principal source of ground water in Harrison County consist of the Wilcox Group, the Carrizo Sand, the Reklaw Formation, and the Queen City Sand, all of Eocene age. These units are, for the most part, hydraulically interconnected and generally function as a single aquifer; the aquifer is herein referred to as the Cypress aquifer. The aquifer, which thickens from about 200 feet along the eastern border of Harrison County to about 900 feet in the southwest corner of the county, consists principally of lenticular beds of sand, silt, and clay. The outcrop area of the Cypress aquifer includes practically all of the land surface area of Harrison County.

The Cypress aquifer contains a large quantity of fresh to slightly saline water in storage--the upper 400 feet of the aquifer contains an estimated 17 million acre-feet of water that can be developed economically.

The aquifer is recharged mainly from the rather heavy precipitation which falls on the county. At least 55,000 acre-feet (49.1 mgd), and perhaps significantly more, is available annually for development without depleting the aquifer. Of this total, at least 40,000 acre-feet (35.7 mgd), which might be salvaged, is rejected to streams from the outcrop of the aquifer. Salvage of a sizeable percentage of this water would require a large number of closely spaced small-capacity wells.

The ground-water supplies in Harrison County are virtually untapped. Of the 34 million acre-feet of ground water in transient storage, only about 2,700 acre-feet was pumped from the Cypress aquifer in 1964. Obviously, the present rate of ground-water withdrawal could be increased substantially.

The water in the aquifer generally is fresh (less than 1,000 parts per million dissolved solids) although in the deeper part of the aquifer the water

is slightly saline (1,000 to 3,000 parts per million dissolved solids). Excessive concentrations of dissolved iron, however, exist at generally predictable zones within the aquifer, and by discriminate well construction and pumping practices, the excessive concentrations of dissolved iron can be avoided.

GROUND-WATER RESOURCES OF HARRISON COUNTY, TEXAS

INTRODUCTION

Location and Extent of Area

Harrison County, in the northeast Texas pine-hardwood timber belt, is bordered by Louisiana on the east, Panola and Rusk Counties on the south, Gregg and Upshur Counties on the west, and Marion County on the north (Figure 1). County boundaries coincide or lie within the main channels of the Sabine River in the southwest and Cypress Creek in the northeast.

Harrison County comprises an area of 892 square miles or approximately 570,000 acres. About 333,000 acres of the county is classified as forest land and about 200,000 as crop and pasture land.

Marshall, the county seat and center of commerce, is 40 miles west of Shreveport, 150 miles east of Dallas, and 75 miles south of Texarkana.

Purpose and Scope of Investigation

The potential economic growth of northeast Texas amply justifies the search for up-to-date information on all the natural resources of the area. Toward this aim and through a cooperative program of the Harrison County Commissioners Court, the Texas Water Development Board, and the U.S. Geological Survey, a ground-water resources investigation of Harrison County was begun in March 1964.

The results of the investigation are contained in this report and generally deal with the source, distribution, availability, quality, and quantity of ground water in Harrison County. Emphasis is placed on the sources and quantity of ground water suitable for public supply, industrial, and irrigation use. Many of the data on which the report was based were obtained through the generous assistance of the landowners and county, municipal, and industrial officials.

Specific objectives of the investigation were:

1. To describe the thickness and extent of the water-bearing material.
2. To delineate those areas within the county that appear most favorable for the development of ground-water supplies suitable for municipal, industrial, and irrigation use.

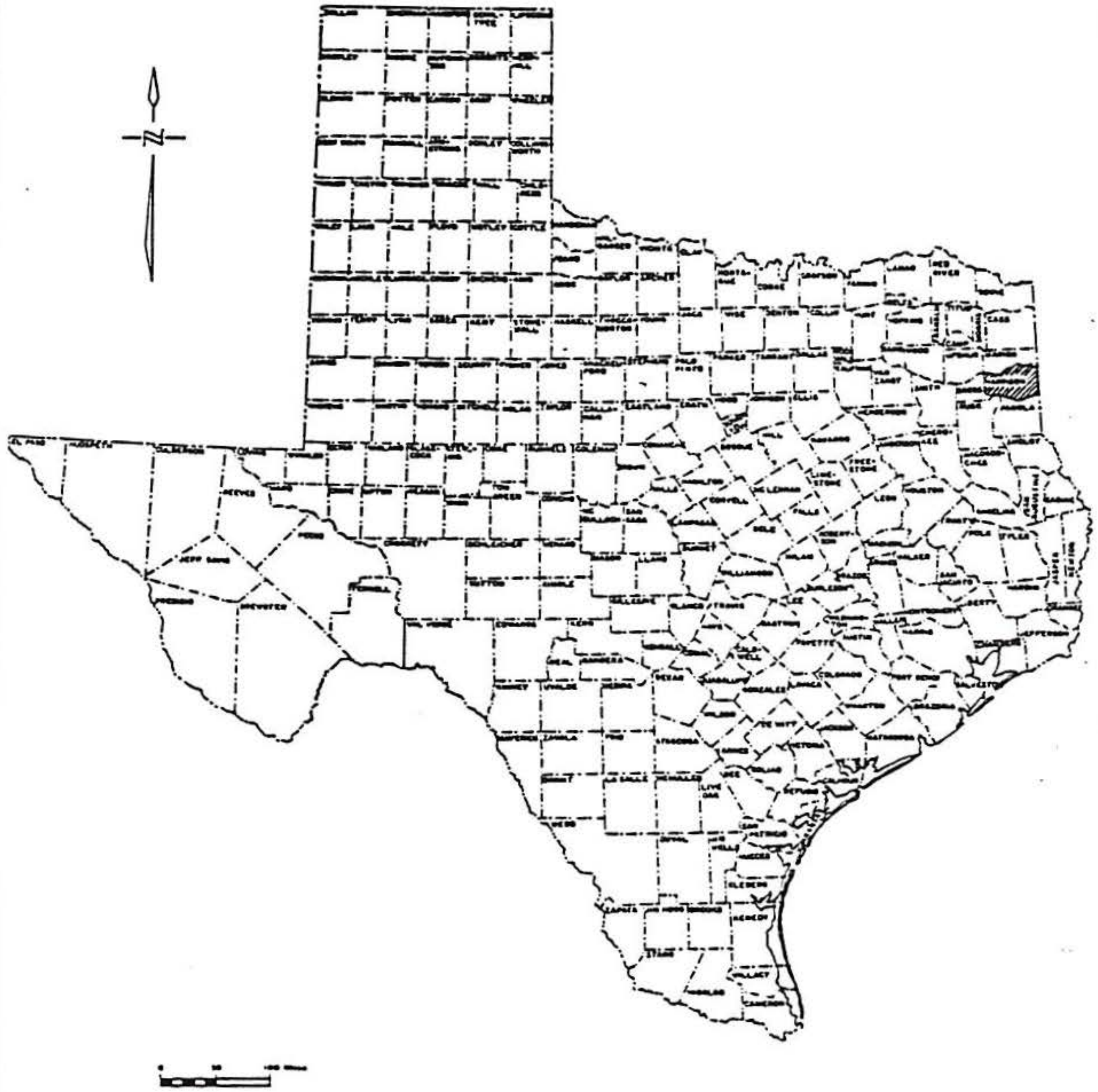


Figure 1

Map of Texas Showing Location of Harrison County

U.S. Geological Survey in cooperation with the Texas Water Development Board and the Harrison County Commissioners Court

9-6

3. To estimate the quantity of ground water available.

4. To determine the vertical and lateral variations in the quantity and quality of the ground-water supplies.

5. To determine the hydraulic characteristics of the water-bearing materials.

6. To estimate the yields and other characteristics of wells that might be drilled in the county.

7. To evaluate any problems related to the development of the ground-water supplies or that may result from surface or subsurface disposal of brine from oil fields in the area.

Methods of Investigation

The principal items of work to meet the objectives of the investigation were as follows:

1. An inventory was made of 232 water wells, 76 oil tests, and 2 springs, including all public supply, industrial, and irrigation wells (Table 5). The locations of the inventoried wells and springs are shown on Figure 11.

2. The electric logs of 76 oil or gas tests (Table 5) were used for correlation purposes and for a study of the water-bearing properties of the geologic formations. The locations of these tests are shown on Figure 11.

3. Approximately 100 drillers' logs and several electric logs of water wells were studied. The drillers' logs of seven representative wells from various parts of the county are shown in Table 6.

4. An inventory was made of the quantities of ground water used for public supply, industry, and irrigation; an estimate was made of the quantities used for domestic and livestock purposes (Table 3).

5. Aquifer tests were made in five wells to determine the hydraulic characteristics of the water-bearing material (Table 2).

6. Analyses of samples of water, collected during the current and past investigations, were used to determine the chemical quality of the ground water (Tables 7 and 8).

7. A map showing the altitude of the base of the fresh to slightly saline water-bearing material in Harrison County was compiled from electric logs (Figure 3).

8. A map showing the approximate thickness of the sand containing fresh to slightly saline water in the principal aquifer was made from electric logs (Figure 10).

9. Two geologic cross sections were made from electric logs (Figure 4).

10. The hydrologic data were analyzed to determine the quantity and quality of ground water available for development.

11. Problems related to the development of ground-water supplies in the county were studied.

Physiography and Climate

Harrison County is in the West Gulf Coastal Plain (Fenneman, 1938, p. 100). The surface of the county is gently rolling to hilly and in general rises from east to west. Altitudes range from about 170 feet above sea level in the vicinity of Caddo Lake to about 600 feet about 8 miles west of Marshall; the average altitude is about 375 feet.

The raising of beef cattle, which has increased during recent years, has become the most important part of the agricultural economy. Resulting increases have therefore occurred in the production of feed crops (such as corn, grain sorghum, and hay), and in the conversion of timbered areas and row croplands to pasture. Dairying is followed in importance by poultry and swine production. The raising of cotton, vegetables, nuts, and fruits is likewise important locally.

Previous Investigations

Detailed studies of the ground-water resources of Harrison County have not been made prior to this investigation. Broadhurst and White (1942) discussed the water supplies available in the southwest corner of Harrison County. The water resources of Harrison County were described by Broadhurst and Breeding (1943). The report included a chapter on the supply of surface water available in the county from the Sabine River and Little Cypress Creek as well as the records of wells and springs, drillers' logs of selected wells, and the results of chemical analyses of water from wells and springs. The public water supplies of Hallsville, Karnack, Marshall, and Waskom were included in an inventory of the public water supplies in eastern Texas by Sundstrom, Hastings, and Broadhurst (1948, p. 150-154). A reconnaissance report on the ground-water resources of the Red River, Sulphur River, and Cypress Creek basins by E. T. Baker and others (1963), and one on the Sabine River basin by B. B. Baker and others (1963), contain information on Harrison County.

Well-Numbering System

The well-numbering system used in this report is one adopted by the Texas Water Development Board for use throughout the State and is based on latitude and longitude. Under this system, each 1-degree quadrangle in the State is given a number consisting of two digits. These are the first two digits appearing in the well number. Each 1-degree quadrangle is divided into 7½-minute quadrangles which are also given 2-digit numbers from 01 to 64. These are the third and fourth digits of the well number. Each 7½-minute quadrangle is subdivided into 2½-minute quadrangles and given a single digit number from 1 to 9. This is the fifth digit of the well number. Finally, each well within a 2½-minute quadrangle is given a 2-digit number in the order in which it is inventoried, starting with 01. These are the last two digits of the well number. In addition to the 7-digit well number, a 2-letter prefix is used to identify the county.

The prefix for Harrison County is LK. All of Harrison County falls within the 1-degree quadrangle 35. So the first two digits of all well numbers in the county is 35. Harrison County covers all or part of twenty-one 7½-minute quadrangles. On the well-location map of this report (Figure 11), the 7½-minute quadrangles are numbered in the northwest corner of each quadrangle. The 3-digit number shown at each well is the number of the 2½-minute quadrangle in which the well is located and the number of the well within the quadrangle.

Thus, well LK-35-30-701 (a standby industrial well at Marshall) is in Harrison County (LK), in the 1-degree quadrangle number (35), in the 7½-minute quadrangle (30), in the 2½-minute quadrangle (7), and was the first well (01) inventoried in that 2½-minute quadrangle.

9-8

GEOLOGY AS RELATED TO THE AVAILABILITY OF GROUND WATER

The geologic units pertinent to the ground water in the report area range in age from Paleocene to Recent. Their thickness, lithology, age, and water-bearing properties are summarized in Table 1. The geologic units crop out in belts that trend generally northeasterly across Harrison County and into adjacent counties (Figure 2).

The report area lies on the northwest flank of the Sabine Uplift, which crests along the Texas-Louisiana border. Consequently, the geologic units, except the Quaternary deposits, generally dip and thicken northwest toward the axis of the East Texas basin in contrast to the eastward slope of the land surface.

The availability of ground water in Harrison County is dependent entirely on the hydrologic characteristics of the geologic units overlying the Midway Group--chiefly those units which, in ascending order, comprise the Wilcox Group, the Carrizo Sand, the Reklaw Formation, and the Queen City Sand.

Following, in ascending order, are the Weches Greensand and the Sparta Sand, which occur only as outliers capping several ridges in the northwestern part of the county. These units, as well as the Quaternary terrace and alluvial materials which occur along and in the major stream flood plains of the county, provide only small quantities of fresh water to a few shallow wells. Consequently, the following discussions are devoted principally to those units--the Wilcox Group, Carrizo Sand, Reklaw Formation, and Queen City Sand--that furnish nearly all the ground water pumped in the county.

The Wilcox Group crops out over a large part of the eastern half of Harrison County (Figure 2). The group has a maximum thickness of about 700 feet and consists mostly of fine to medium sand interbedded with considerable amounts of clay and seams of lignite. Thick sand beds are present locally; however, the individual sand beds are not continuous, and therefore are difficult to correlate between wells, even wells a short distance apart. Thin beds of limonite are common on the surface. The Wilcox yields small (less than 50 gallons per minute) to moderate (50 to 500 gallons per minute) quantities of fresh water (less than 1,000 parts per million dissolved solids) to wells throughout the county. For practical purposes, the base of the Wilcox is approximately the base of fresh water, although slightly saline water (1,000 to 3,000 parts per million dissolved solids) can be obtained in the deeper parts of the aquifer.

The Carrizo Sand crops out in a narrow crescent-shaped belt across the east-central and southern parts of the county (Figure 2). The Carrizo has a maximum thickness of about 100 feet and consists chiefly of fine to medium sand, silt, and clay. In general, the Carrizo is difficult to distinguish from sand of the Wilcox Group below and the Reklaw Formation above. Where wells are known to tap the Carrizo, it yields small to moderate quantities of fresh to slightly saline water.

The Reklaw Formation crops out in a belt of variable width adjoining the outcrop of the Carrizo Sand on the west and northwest (Figure 2). The formation consists of clay and fine glauconitic and quartzitic sand, locally cross-bedded; thin beds of limonite are common in the outcrop. The Reklaw has a maximum thickness of about 100 feet and is capable of furnishing at least small amounts of fresh to slightly saline water to wells in the outcrop area.

Table 1.--Geologic units and their water-bearing properties, Harrison County

System	Series	Group	Unit	Approximate maximum thickness (feet)	Character of rocks	Water-bearing properties
Quaternary	Recent and Pleistocene		Alluvium and terrace deposits (undivided)	50	Predominantly clay, silt, and fine sand. Terrace material locally fine to coarse sand.	Yields small quantities of water to a few wells
Tertiary	Eocene	Claiborne	Sparta Sand	25	Fine sand and sandy clay. Limonitic ironstone seams common in outcrop area.	Do.
			Weches Greensand	50	Fine to medium sand, glauconitic and quartzitic, laminar to cross-bedded. Limonitic ironstone seams and concretions common in outcrop area.	Do.
			Queen City Sand	200	Very fine to medium sand, quartzitic, interbedded with silt and clay, laminar to cross-bedded. Contains minor amounts of lignite. Limonitic ironstone seams common in outcrop area	Cypress aquifer
			Reklaw Formation	100	Clay and fine sand, glauconitic and quartzitic, mostly laminar but locally cross-bedded. Locally contains marine fossils. Limonitic ironstone seams common in outcrop area.	
			Carrizo Sand	100	Fine to medium sand interbedded with silt and clay. Laminar to cross-bedded. Limonitic ironstone seams common in outcrop area.	
		Wilcox		700	Fine to medium sand interbedded with considerable amounts of clay. Commonly contains seams of lignite. Limonitic ironstone seams common in outcrop area.	
	Paleocene	Midway		900	Predominantly marine clay; becomes silty in upper part.	Not known to yield fresh water in Harrison County.

The Queen City Sand crops out in a large part of the northwestern quarter of the county (Figure 2) and consists of very fine to medium sand interbedded with silt and clay and impure lignite. Limonite forms on the weathered outcrops of the Queen City. The sand is typically lenticular and cross-bedded. The Queen City has a maximum thickness of about 200 feet and yields moderate quantities of fresh to slightly saline water to wells.

CYPRESS AQUIFER

General Physical Features

An aquifer is defined as a geologic formation, group of formations, or a part of a formation that is water bearing. In the report area, the Wilcox Group, Carrizo Sand, Reklaw Formation, and Queen City Sand are, for the most part, hydraulically interconnected and generally function as a single aquifer. The aquifer is herein referred to as the Cypress aquifer and is approximately equivalent to the Cypress aquifer in Camp, Franklin, Morris, and Titus Counties as defined by Broom and Alexander (1965, p. 23-24).

The outcrop of the Cypress aquifer in Harrison County includes about 900 square miles, or nearly all the land surface of Harrison County. The thickness of the Cypress aquifer ranges from about 200 feet along the eastern boundary of the county to about 900 feet in the southwestern part of the county. The base of the aquifer, which also is the base of the Wilcox Group and approximately the base of fresh water, slopes westward, ranging from an altitude of 193 feet above sea level in the east-central part of the county to more than 750 feet below sea level in the northwest corner of the county (Figure 3).

The rock materials comprising the Cypress aquifer, particularly the sand and clay, are not uniformly distributed laterally or vertically; thus, correlation of individual sand and clay beds from well to well is difficult. In general, the beds are lenticular, the lenses of clay, sand, and silt pinching out, coalescing, or grading into each other within short distances. The range in thickness of individual beds and the discontinuity of the beds are shown on the geologic sections (Figure 4), which were constructed from electric logs. On the logs, the sand beds are represented by high resistivities and the clay and silt beds by low resistivities.

Source and Occurrence of Ground Water

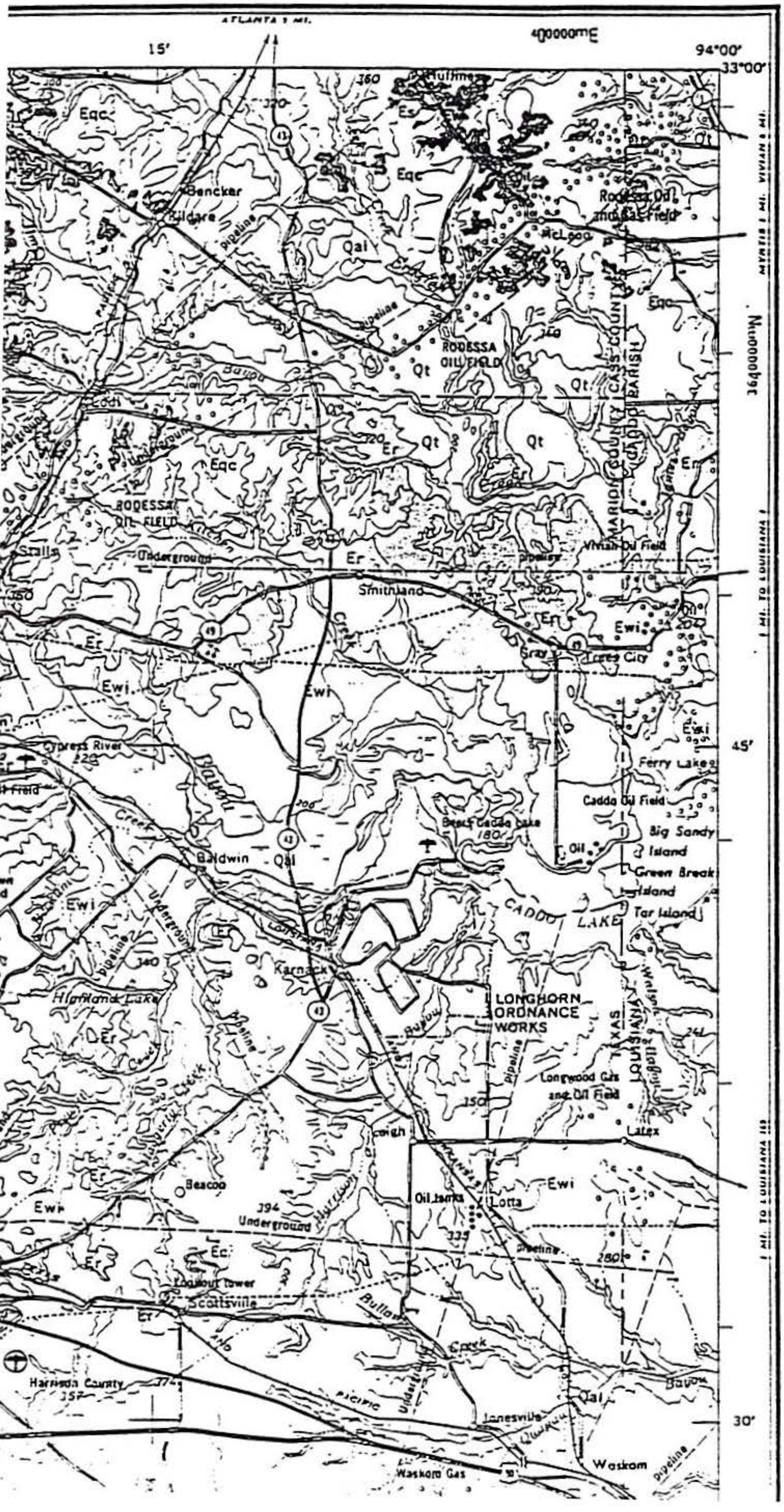
The source of ground water in the Cypress aquifer is precipitation on the outcrop of the aquifer in Harrison County. Much of the water from precipitation is evaporated at the land surface, transpired by plants, or retained by capillary forces in the soil; a small part percolates downward by gravity through the zone of aeration to the zone of saturation (or the level at which all the voids or pore spaces are saturated).

Ground water occurs under unconfined or water-table conditions and confined or artesian conditions. Unconfined water occurs where the upper surface of the zone of saturation is under atmospheric pressure only, and the water is free to rise or fall in response to the changes in the volume of water in storage. The upper surface of the zone of saturation is the water table, and a well

REFERENCE 10

"Geologic Atlas of Texas, Tyler Sheet", Bureau of Economic Geology, The University of Texas at Austin.

GEOLOGIC ATLAS OF TEXAS
TYLER SHEET



EXPLANATION

SEDIMENTARY ROCKS

Recent

Qal

Alluvium

Flood-plain deposits

Pleistocene

Qt

Fluviatile terrace deposits undivided

Eocene

Etg
Es

Sparta Sand

Quartz sand, fine to medium grained, light gray to brow slightly cohesive from silt and clay matrix, mass cross-bedded, interbeds of sandy clay more abundan locally carbonaceous; weathers various shades of li at base hard, brown, ferruginous sandstone; lower p feet thick, upper part absent. Locally includes Tyl sand Member, Etg, quartz-glauconite greensand, gray massive, locally cross-bedded; weathers dark reddis abundant ironstone concretions

Ewc

Weches Formation

Glauconite and quartz sand, grayish green to grayish c thin bedded, locally cross-bedded to lenticular, clay light brown to moderate light gray, silty, muscovitic ded; weathers moderate to dark reddish brown, loc limonitic and sideritic iron ore and clay ironstone c marine megafossils in southern part; 35± feet th 0–70 feet

Eqc

Queen City Sand

Quartz sand, fine grained to locally medium grained, li brownish gray, locally carbonaceous, and clay, gray silty, slightly lignitic, sand most abundant to west; u and white mottled, ironstone concretions and ledge local beds of glauconite-quartz greensand, cross-bed ers to ferruginous ledges and rubble; 100–400 feet southeastward

Er

Reklaw Formation

Upper 100± feet, clay, brownish black to brownish muscovitic, carbonaceous, laminated, interbeds of reddish-brown clay; weathers light brown, ironst tions common; a few marine fossils. Lower 15± sand, fine to very fine grained, grayish green, argillaceous, massive, locally cross-bedded; weather brown to dark yellowish orange with clay ironstone rubble; fossils, clay ironstone, and clay decrease n

Ec

Carrizo Sand

Upper part, very fine sand, silt, clayey silt, silty clay dark gray, carbonaceous; weathers moderate yell to dark reddish brown, indurated ledges of dark br ironstone common. Lower part, quartz sand, fine grained, light brownish gray, weakly cohesive, ma cross-bedded; weathers light gray to various sh Thickness 20–100 feet

Ewi

Wilcox Group undivided

Mostly silty and sandy clay, various shades of gray, clay, lignite, silt, and quartz sand, in part carbon nated to massive, locally cross-bedded, weathers shades of gray, brown, yellow, and red. Calcareous ironstone concretions common; abundant plant marine fossils in southeastern part; 500–1,000 fe

E

Eocene rocks undivided

Reklaw Formation, Carrizo Sand, Wilcox Group Group on Brooks dome not separately shown

Ewn

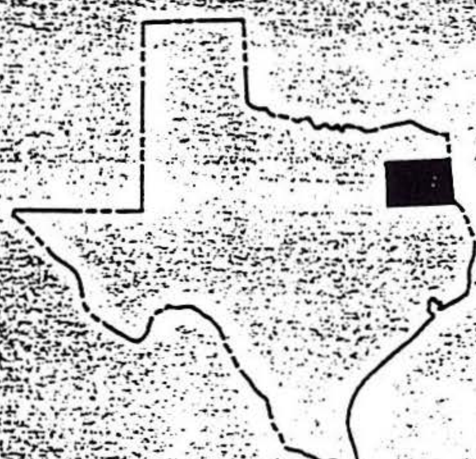
Pritchett
Mings Chapel
Glenwood
West Mountain
Lake Gladewater
Big Sandy
Union Grove
Seventy Four
East Mountain
Judson
North Lansing Gas Field
Sarma Hill
River
Gladewater
Gladewater Park
Tenneryville
White Oak
Greggton
Longview
Lumview Heights
Radio tower
Friendship
Winona
Starrville
Swamp City
Skyhanger
Moss Lake
Bodie
Willow Springs Gas Field
Foote
Creek
Liberty City
Oil tanks
Sabine
Goodman Mountain
Kilgore
Gregg County
Knox Lee Power Plant
Elderville
GREGG COUNTY
RUSK COUNTY
Chapel Hill Oil Field
Lake Cherokee
Chalk Hill
Cross Roads
Monroe
Leveretts Chapel
Pitner Junction
Overton
Oak Hill
Crims Chapel
Lake Tyler
Omen
Arp
St Clair City
Turnertown
Selman City
Henderson
Church Hill
Troup
Henrys Chapel
Oil tanks
Concord
Black Jack
Good Springs
Gould
CHEROKEE COUNTY
RUSK COUNTY
Underground
pipeline

BUREAU OF ECONOMIC GEOLOGY
THE UNIVERSITY OF TEXAS AT AUSTIN
AUSTIN, TEXAS 78712
PETER T. FLAWN, *Director*

GEOLOGIC ATLAS OF TEXAS

Tyler Sheet

Scale: 1:250,000



March 1965

REFERENCE 11

Shannon Breslin, Texas Parks and Wildlife-Texas Natural Heritage Program, Record of Communication with Keith Westberry, Fluor Daniel, Inc., Concerning Endangered Species/Sensitive Environments.

RECORD OF TELEPHONE CONVERSATION

From: Keith Westberry   Keith Westberry 4/15/93   Date: 04-15-93

Location: Fluor Daniel Inc., Dallas   Time: 10:30 AM

Subject: Endangered Species/Sensitive Environments

To: Shannon Breslin   P.O. Number:

Location: Texas Parks & Wildlife Dept.-Tx. Nat. Heritage Program

Other Ref.: (512) 448-4311

Mrs. Breslin looked up on a topo the locations of the three sites in question and passed along the information about endangered species and sensitive environments within a 4 mile radius and 15-mile downstream. This information is as follows:

New Longview Landfill

- Cat.#2 Federal (End. & Threat.) - Neches River Rose Mallow
- Cat.#2 Federal & State Threatened - Alligator, Snapping Turtle
- Wintering/Nesting Area for Bald Eagles.

Dixie (TEI) Petro-Chemical	Delta Solvents & Chemical
-same as above	-No Rookeries
-Numerous Rookeries around the Texas Eastman Plant Southeast of Longview.	-Everything else is the same as above.

REFERENCE 12

U.S. Geological Survey, 7,5 Minute Topographic Map, Lakeport Quadrangle, Texas, Provisional Edition, 1983.

U.S.G.S. 7.5 MIN. TOPOGRAPHIC MAP
LAKEPORT, QUADRANGLE

FLUOR DANIEL

FIGURE 1
SITE LOCATION MAP
DIXIE (TE) PETRO-CHEM
LONGVIEW, TEXAS

CAD FILE No. LOC-MAP

12-1

REFERENCE 13

Mike McGuire, Eastman Villa Mobile Home Park, Record of Communication with Keith Westberry, Fluor Daniel, Inc., Concerning the number of residents in the adjacent trailer park, September 21, 1993.

RECORD OF TELEPHONE CONVERSATION

From: Keith Westberry KW **Date:** 09-21-93

Location: Fluor Daniel Inc., Dallas **Time:** 12:30 pm

Subject: Number of homes in trailer park

To: Mike McGuire **P.O. Number:**

Location: Eastman Villa Mobile Home Park

Other Ref.: (903) 758-3655

Mr. McGuire stated that he did not know how many residents were living in the trailer park. He stated that there were approximately 45 trailers in the park.

REFERENCE 14

Dave Terry, Texas Water Commission, Record of Communication with Keith Westberry, Fluor Daniel, Inc., Concerning Well Head Protection Areas.

RECORD OF TELEPHONE CONVERSATION

From: Keith Westberry Keith Westberry **Date:** 08-02-93

Location: Fluor Daniel Inc., Dallas **Time:** 2:10

Subject: WHPA's of Longview SI sites

To: Dave Terry **P.O. Number:** _

Location: TWC - Austin

Other Ref.: (512) 463-8266

I spoke with Mr. Terry concerning the SI site in Longview, TX. Mr. Terry stated that the City of Longview was on a surface water system therefore they would not be part of the Wellhead Protection Program. However upon asking about the communities of Gum Springs and White Oak he did alert me that there were some WHPA's.

Gum Springs - Has 2 wells, each of which have a 1/4 mile WHPA around them.

White Oak - The White Oak Valley Estates Community has 2 wells which together have 1 WHPA.

These areas were not positively identified as within the 4-mile radius of the site. Therefore I sent Mr. Terry a fax with maps locating the sites. He stated that he would call back and let me know how close the WHPA's were to my sites.

FAX No. (512) 463-6648

REFERENCE 15

U.S. Department of the Interior, Fish and Wildlife Service, "Classification of Wetlands and Deepwater Habitats of the U.S. Lakeport Quadrangle.

Dixie

NATIONAL WETLAN

UNITED STATES DEPARTMEN

TES
IE INTERIOR
URVEY

SCALE 1:24000

ACREAGE GUIDE

1 acre · 5 acres · 10 acres · 20 acres · 40 acres

For information on availability of NWI maps, call 1-800-USA-MAPS.

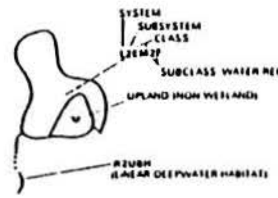
Regional Director (ARDE) Region II
U.S. Fish and Wildlife Service
P.O. Box 1306
Albuquerque, New Mexico 87103

SPECIAL NOTE

This document was prepared primarily by stereoscopic analysis of high altitude aerial photographs. Wetlands were identified on the photographs based on vegetation, visible hydrology, and geography in accordance with Classification of Wetlands and Deepwater Habitats of the United States (FWS/OBS - 79/31 December 1979). The aerial photographs typically reflect conditions during the specific year and season when they were taken. In addition, there is a margin of error inherent in the use of the aerial photographs. Thus, a detailed on the ground and historical analysis of a single site may result in a revision of the wetland boundaries established through photographic interpretation. In addition, some small wetlands and those obscured by dense forest cover may not be included on this document.

Federal, State and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, State or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, State or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

SYMBOLOGY EXAMPLE



U Primarily represents upland areas, but may include unclassified wetlands such as man-modified areas, non-photo-identifiable areas and/or unintentional omissions.

NOTES TO THE USER

- Subsystems, Classes, Subclasses, and Water Regimes in italics were developed specifically for NATIONAL WETLANDS INVENTORY mapping.
- Some areas designated as R4SB, R4SBW OR R4SBJ (INTERMITTENT STREAMS) may not meet the definition of wetland.
- This map uses the class Unconsolidated Shore (US). On earlier NWI maps that class was designated Beach/Bar (BB) or Flat (FL). Subclasses remain the same in both versions.

AERIAL PHOTOGRAPHY

DATE 12 / / 89 DATE / /
SCALE 165 000 SCALE
TYPE CIR TYPE

U.S. DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Prepared by National Wetlands Inventory
1992

SYSTEM · SUBSYSTEM · CLASS · Subclass

M – MARINE: 1 – SUBTIDAL; 2 – INTERTIDAL

E – ESTUARINE: 1 – SUBTIDAL; 2 – INTERTIDAL

R – RIVERINE: 1 – TIDAL; 2 – LOWER PERENNIAL; 3 – UPPER PERENNIAL; 4 – INTERMITTENT; 5 – UNKNOWN PERENNIAL

L – LACUSTRINE: 1 – LIMNETIC; 2 – LITTORAL

P – PALUSTRINE

MODIFIERS

WATER REGIME: Non-Tidal; Tidal · WATER CHEMISTRY · SOIL · SPECIAL MODIFIERS

2-51

REFERENCE 16

Texas Water Development Board, Ground Water Data System, "Water Level Publication Report, County-Gregg", "Records of Wells, Springs, and Test Holes", June, 1993.

TEXAS WATER DEVELOPMENT BOARD
GROUND WATER DATA SYSTEM

WATER LEVEL PUBLICATION REPORT
COUNTY - Gregg

WATER LEVEL MEASUREMENTS IN FEET ABOVE OR BELOW (-) LAND SURFACE

STATE WELL NUMBER	AQUIFER CODE	WELL DEPTH	ELEVATION OF LAND SURFACE	DATE OF VISIT OR MEASUREMENT	DEPTH TO WATER FROM LAND SURFACE	CHANGE IN LEVEL SINCE LAST STATIC MEASUREMENT	ELEVATION OF WATER LEVEL
35 25 602	124QCWX	536	380	05/08/1961	-91.10		289
				09/13/1966	-85.30	5.80	295
				06/24/1970	-105.05	-19.75	275
				02/23/1971	-102.80	2.25	277
				02/17/1972	-103.22	-0.42	277
				02/14/1973	-109.58	-6.36	270
				02/13/1975	-104.48	5.10	276
				12/01/1975	-104.58	-0.10	275
				12/10/1976	-104.90	-0.32	275
				12/08/1978	-111.55	-6.65	268
				11/10/1981	-110.85	0.70	269
				11/01/1982	-120.00	-9.15	260
				10/29/1984	-119.45	0.55	261
				12/05/1985	-112.37	7.08	268
				11/18/1986	-114.40	-2.03	266
				02/11/1988	-113.55	0.85	266
35 25 801	124CZWX	279	295	07/12/1940	-83.20		212
				05/08/1961	-44.30	38.90	251
				09/13/1966	-43.80	0.50	251
35 25 802	124CZWX	390	375	08/ /1943	-182.00		193
				05/08/1961	-131.60	50.40	243
				09/13/1966	-122.90	8.70	252
35 25 901	124CZWX	616	325	02/ /1947	-116.00		209
35 25 902	124CZWX	478	305	09/13/1966	-95.80		209
35 26 201	124QNCT	201	420	09/26/1966	-105.80		314
35 26 202	124CZWX	390	420	09/26/1966	-175.10		245
35 26 204	124CZWX	364	405	09/26/1966	-154.90		250
35 26 401	124QNCT	26	380	02/22/1967	-15.00		365
				08/03/1976	-8.76	6.24	371
				12/10/1976	-9.40	-0.64	371
				12/15/1977	-9.53	-0.13	370

P WATER LEVEL AFFECTED BY PUMPAGE OR RECHARGE AT THIS OR NEARBY WELL(S)

Q ACCURACY OF MEASUREMENT IS QUESTIONABLE

COUNTY - Gregg

WATER LEVEL MEASUREMENTS IN FEET ABOVE OR BELOW (-) LAND SURFACE

STATE WELL NUMBER	AQUIFER CODE	WELL DEPTH	ELEVATION OF LAND SURFACE	DATE OF VISIT OR MEASUREMENT	DEPTH TO WATER FROM LAND SURFACE	CHANGE IN LEVEL SINCE LAST STATIC MEASUREMENT	ELEVATION OF WATER LEVEL
35 26 708	124CZWX	540	365	11/ /1956	-185.00		180
35 26 708	124CZWX	540	365	12/21/1966	-193.20	-8.20	172
35 26 709	124CZWX	470	380	08/29/1941	-171.60		208
				05/15/1961	-177.80	-6.20	202
				09/28/1966	-180.50	-2.70	200
35 27 101	124QNCT	49	375	12/12/1966	-39.40		336
				06/24/1970	-34.20	5.20	341
				02/23/1971	-36.46	-2.26	339
				02/17/1972	-36.96	-0.50	338
				02/14/1973	-37.30	-0.34	338
				02/13/1975	-27.10	10.20	348
				12/01/1975	-27.27	-0.17	348
				12/10/1976	-28.20	-0.93	347
				12/15/1977	-30.29	-2.09	345
				12/08/1978	-32.71	-2.42	342
				11/10/1981	-32.41	0.30	343
				11/18/1982	-32.89	-0.48	342
				11/16/1983	-33.97	-1.08	341
				10/30/1984	-34.92	-0.95	340
				11/17/1986	-30.53	4.39	344
				02/11/1988	-28.14	2.39	347
				11/09/1988	-30.92	-2.78	344
				10/18/1989	-30.31	0.61	345
				11/12/1990	-27.34	2.97	348
				12/10/1991	-24.35	2.99	351
				11/17/1992	-25.55	-1.20	349
35 27 401	124CZWX	505	445	03/24/1965	-190.00		255
				08/03/1976	-218.00	-28.00	227
				12/10/1976	-208.90	9.10	236
				12/15/1977	-204.80	4.10	240
				11/10/1981	-215.75	-10.95	229
				11/16/1983	-219.73	-3.98	225
				10/30/1984	-212.45	7.28	233
				11/17/1986	-216.58	-4.13	228
35 27 402	124QNCT	45	390	08/09/1974	-16.00		374
				08/02/1976	-12.12	3.88	378
				12/10/1976	-17.02	-4.90	373
				12/15/1977	-13.85	3.17	376

P WATER LEVEL AFFECTED BY PUMPAGE OR RECHARGE AT THIS OR NEARBY WELL(S)

Q ACCURACY OF MEASUREMENT IS QUESTIONABLE

WATER LEVEL PUBLICATION REPORT
COUNTY - Gregg

WATER LEVEL MEASUREMENTS IN FEET ABOVE OR BELOW (-) LAND SURFACE

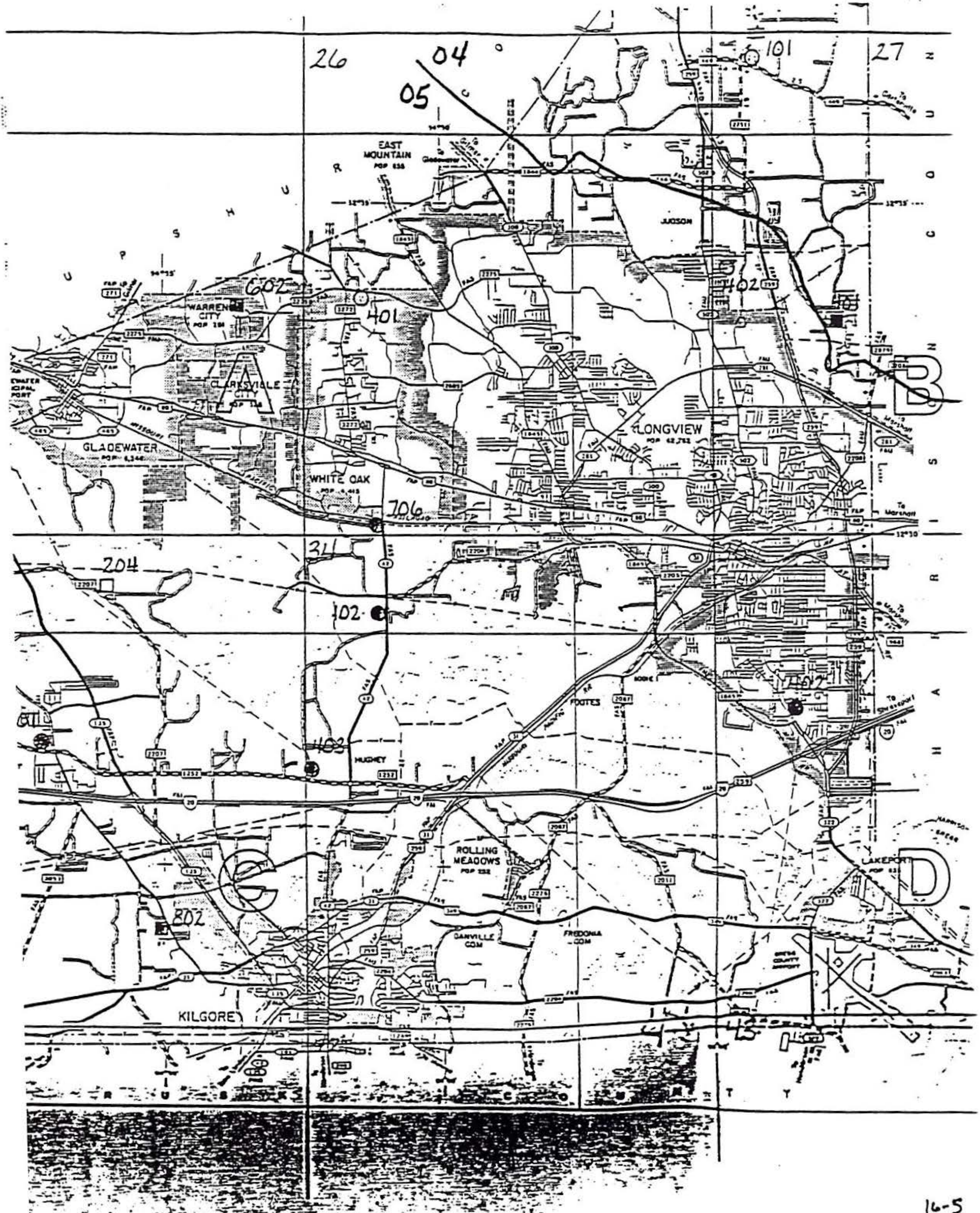
STATE WELL NUMBER	AQUIFER CODE	WELL DEPTH	ELEVATION OF LAND SURFACE	DATE OF VISIT OR MEASUREMENT	DEPTH TO WATER FROM LAND SURFACE	CHANGE IN LEVEL SINCE LAST STATIC MEASUREMENT	ELEVATION OF WATER LEVEL
				12/10/1991	-233.10	-2.50	167
35 33 501	124CZWX	762	400	11/16/1992	-229.60P		170
35 33 502	124CZWX	622	400	12/08/1966	-170.70		229
35 33 601	124CZWX	854	410	09/22/1966	-168.80		241
35 33 801	124CZWX	507	380	12/05/1966	-159.60		220
35 33 802	124CZWX	438	382	06/23/1970	-146.65		235
				02/23/1971	-137.30	9.35	245
				02/17/1972	-136.91	0.39	245
				02/14/1973	-153.21	-16.30	229
				02/07/1974	-151.10	2.11	231
				02/13/1975	-150.73	0.37	231
				12/01/1975	-153.24	-2.51	229
				12/10/1976	-154.32	-1.08	228
35 33 803	124CZWX	388	375	02/ /1966	-151.00		224
35 33 901	124CZWX	875	370	05/ /1931	-87.00		283
				12/11/1939	-155.00	-68.00	215
				09/03/1941	-161.80	-6.80	208
				09/21/1966	-133.10	28.70	237
35 33 902	124CZWX	906	370	12/11/1939	-150.10		220
				11/26/1940	-153.20	-3.10	217
				09/03/1941	-157.10	-3.90	213
				09/21/1966	-124.40	32.70	246
35 33 904	124CZWX	528	345	04/ /1936	-70.00		275
				05/09/1961	-165.60	-95.60	179
				02/19/1964	-154.80	10.80	190
				09/08/1966	-156.00	-1.20	189
35 33 906	124CZWX	950	290	02/20/1964	-46.20		244
35 33 907	124CZWX	650	320	05/29/1936	-86.10		234
35 33 910	124CZWX	512	350	09/07/1966	-171.10		179
35 33 911	124CZWX	915	370	12/05/1966	-70.70		299

P WATER LEVEL AFFECTED BY PUMPAGE OR RECHARGE AT THIS OR NEARBY WELL(S)
Q ACCURACY OF MEASUREMENT IS QUESTIONABLE

WATER LEVEL MEASUREMENTS IN FEET ABOVE OR BELOW (-) LAND SURFACE

STATE WELL NUMBER	AQUIFER CODE	WELL DEPTH	ELEVATION OF LAND SURFACE	DATE OF VISIT OR MEASUREMENT	DEPTH TO WATER FROM LAND SURFACE	CHANGE IN LEVEL SINCE LAST STATIC MEASUREMENT	ELEVATION OF WATER LEVEL
				11/12/1990	-113.50	-30.06	227
35 34 403	124CZWX	800	340	12/10/1991	-118.47	-4.97	222
				11/16/1992	-118.67	-0.20	221
35 34 501	124CZWX	681	265	05/17/1961	-46.90		218
				09/02/1966	-32.80	14.10	232
35 34 502	124CZWX	29	265	09/02/1966	-16.80		248
35 34 701	124CZWX	827	230	09/21/1966	-96.00		134
35 34 702	124CZWX	771	230	09/ /1934	-111.00		119
35 34 703	124CZWX	582	330	07/ /1938	-117.00		213
35 34 801	124CZWX	450	360	12/02/1966	-106.60		253
35 34 901	124CZWX	300	340	11/ /1963	-80.00		260
35 35 401	124CZWX	378	320	09/02/1966	-70.90		249
35 35 402	124CZWX	320	320	10/ /1955	-84.00		236
				06/24/1970	-65.20	18.80	255
				02/23/1971	-65.70	-0.50	254
				02/17/1972	-65.44	0.26	255
				02/14/1973	-66.19	-0.75	254
				02/13/1975	-64.29	1.90	256
				12/01/1975	-65.70	-1.41	254
				12/10/1976	-65.87	-0.17	254
				12/15/1977	-66.35	-0.48	254
				12/08/1978	-68.04	-1.69	252
				03/17/1981	-67.99	0.05	252
				11/10/1981	-68.12	-0.13	252
				11/18/1982	-68.62	-0.50	251
				11/16/1983	-68.99	-0.37	251
				10/30/1984	-69.24	-0.25	251
				11/18/1986	-68.73	0.51	251
				02/11/1988	-67.98	0.75	252
				11/11/1988	-70.80	-2.82	249
				10/19/1989	-69.87	0.93	250
				11/12/1990	-70.06	-0.19	250
				12/10/1991	-70.95	-0.89	249

P WATER LEVEL AFFECTED BY PUMPAGE OR RECHARGE AT THIS OR NEARBY WELL(S)
Q ACCURACY OF MEASUREMENT IS QUESTIONABLE



26
04
05
101
27
EAST MOUNTAIN
JUDSON
602
WARREN CITY
401
402
A
B
CLARKSVILLE CITY
GLADEWATER
LONGVIEW
WHITE OAK
706
34
204
102
FOOTES
403
HUGHEY
ROLLING MEADOWS
LAKEPORT
C
D
802
DANVILLE COM
FREDONIA COM
KILGORE

Office Copy
2-21-91
EZ

GENERAL HIGHWAY MAP
GREGG COUNTY
TEXAS

PREPARED BY THE

STATE DEPARTMENT OF HIGHWAYS
AND PUBLIC TRANSPORTATION

TRANSPORTATION PLANNING DIVISION

IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

SCALE IN MILES

0 1 2 3 4

1980

1980 CENSUS FIGURES

HIGHWAYS REVISED TO MAY 1, 1989

Copies of this map are available for public use at nominal cost from the State Department of Highways and Public Transportation, P O Box 5051, Austin, Texas 78763

POLYCONIC PROJECTION NORTH AMERICAN DATUM
CONTROL: U.S. COAST AND GEODETIC SURVEY AND U.S. GEOLOGICAL SURVEY

KEY TO COUNTIES

Sheet 1 of 1 Base Sheet and 4 Supplementary Sheets

LEGEND

Water-Level Observation Wells

- Current Well
- Historical Well
- 124 - Carrizo Sand-Wilcox GrA
- 124 - Queen City Sand
- 124 - Queen City Sand-Wilcox Grp

TEXAS WATER DEVELOPMENT BOARD
GROUND WATER DATA SYSTEM

RECORDS OF WELLS, SPRINGS, AND TEST HOLES
COUNTY - Gregg

WELL	OWNER	LAT.	LONG.	SOURCE OF COORDS.	WATER BEARING UNIT	DEPTH OF WELL (FT.)	DATE COM-PLETED	WELL TYPE	USE OF WATER	WATER LEVEL AVAIL.	WATER QUAL. AVAIL.
35 19 701	(b) (6) [redacted] Well 1-B	323845	944345	5	NOT-APPL	3650	1959			N	N
35 25 601	(b) (6) [redacted] Well 33	323345	945345	5	NOT-APPL	3775	1948			N	N
35 25 602	Warren Petroleum Corp.	323324	945348		124QCWX	536	05201943	W	U	H	Y
35 25 801	City of Gladewater Well 5	323115	945615	5	124CZWX	279	1940	W	U	M	Y
35 25 802	City of Gladewater Well 6	323115	945615	5	124CZWX	390	1943		U	M	Y
35 25 803	(b) (6) [redacted] Well A-2	323115	945615	5	NOT-APPL	3600	1950			N	N
35 25 901	Warren Petroleum	323110	945426		124CZWX	616	1947		N	M	Y
35 25 902	East Texas Water Co.	323115	945345	5	124CZWX	478	1959		U	M	N
35 25 903	(b) (6) [redacted] Well 14	323115	945345	5	NOT-APPL	3700	1946			N	N
35 25 904	(b) (6) [redacted] Well 15	323115	945345	5	NOT-APPL	3640	1947			N	N
35 26 201	East Texas Water Co.	323615	944845	5	124QNCT	201	1959		U	M	N
35 26 202	East Texas Water Co. Well 2	323526	944751		124CZWX	390	1957		P	N	Y
35 26 203	East Texas Water Co.	323615	944845	5	124QNCT	210	1959		U	N	N
35 26 204	East Texas Water Co.	323615	944845	5	124CZWX	364	1959		P	M	Y
35 26 205	(b) (6) [redacted] Well 11	323615	944845	5	NOT-APPL	3800	1948			N	N
35 26 301	(b) (6) [redacted] Well 11-A	323615	944615	5	NOT-APPL	3695	1955			N	N
35 26 302		323615	944615	5	124CZWX					N	N
35 26 401		323332	945131		124QNCT	26			H	C	Y
35 26 501	East Texas Water Co.	323345.	944845	5	124CZWX	478	1959		P	M	N
35 26 502	Warren Petroleum Corp.	323439	944930		124QNCT	161	1941		U	M	Y
35 26 601		323345	944615	5	124QNCT					N	N
35 26 701	Sinclair Oil Co.	323023	945204		124CZWX	547	1961		N	M	Y
35 26 702	Sinclair Oil Co.	323018	945158		124CZWX	533	1947		N	N	Y
35 26 703	Sinclair Oil Co.	323115	945115	5	124CZWX	446	1934		[illegible]	[illegible]	[illegible]

16-8

RECORDS OF WELLS, SPRINGS, AND TEST HOLES

COUNTY - Gregg

WELL	OWNER	LAT.	LONG.	SOURCE OF COORDS.	WATER BEARING UNIT	DEPTH OF WELL (FT.)	DATE COM-PLETED	WELL TYPE	USE OF WATER	WATER LEVEL AVAIL.	WATER QUAL. AVAIL.
35 26 704	Sinclair Oil Co.	323115	945115	5	124CZWX	455	1935		U	N	Y
35 26 705	East Texas Water Co.	323013	945108		124CZWX	458	1938		U	N	Y
★ 35 26 706	City of White Oak	323013	945113		124CZWX	430	04061964	W	U	C	Y
35 26 707	Amerada Petroleum Corp.	323115	945115	5	124CZWX	404	1934		H	N	Y
35 26 708	Cities Service Oil Co.	323203	945003		124CZWX	540	1956		N	N	Y
35 26 709	White Oak School	323151	945134		124CZWX	470	1940	W	P	N	Y
35 26 710	[redacted] Well 12	323115	945115	5	NOT-APPL	3663	1947			N	N
35 26 711	[redacted] Well 14	323115	945115	5	NOT-APPL	3500	1947			N	N
35 26 712		323115	945115	5	124CZWX					N	N
35 26 713		323115	945115	5	124CZWX					N	N
35 26 801	Premier Oil & Refining Co.	323115	944845	5	124CZWX	299	1937		U	N	Y
35 26 802	[redacted] Well 9	323115	944845	5	NOT-APPL	3530	1948			N	N
35 27 101	Gregg County Precinct #1	323708	944423		124QNCT	49			U	C	Y
35 27 102	[redacted]	323615	944345	5	124CZWX	500			H S	N	Y
35 27 401	Tryon Road Water Supply Corp.	323315	944246		124CZWX	505	1965	W	P	H	Y
35 27 402		323400	944443		124QNCT	45			H	C	Y
35 27 403	Tryon Road WSC	323442	944359		124CZWX	325			U	N	Y
35 27 404	Tryon Road WSC	323418	944325		124CZWX	296			P	N	Y
35 27 405	Tryon Road WSC	323431	944237		124CZWX	245			P	N	Y
35 33 201	Sinclair Oil Co.	322845	945615	5	124CZWX	1008	1931		U	N	Y
35 33 202	Sinclair Oil Co.	322845	945615	5	124CZWX	390	1932		U	N	N
35 33 203	[redacted] Well 7	322845	945615	5	NOT-APPL	3708	1949			N	N
35 33 204		322913	945602		124QNCT	47			U	H	N
35 33 301	[redacted] Well 98	322845	945345	5	NOT-APPL	3600	1949			N	N
35 33 501	Sabine School	322650	945705		124CZWX	762	1951	W	P	C	Y
35 33 502	Liberty City WSC	322640	945715	1	124CZWX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

16-9

RECORDS OF WELLS, SPRINGS, AND TEST HOLES
COUNTY - Gregg

WELL	OWNER	LAT.	LONG.	SOURCE OF COORDS.	WATER BEARING UNIT	DEPTH OF WELL (FT.)	DATE COM-PLETED	WELL TYPE	USE OF WATER	WATER LEVEL AVAIL.	WATER QUAL. AVAIL.
35 33 504		322620	945600		124CZWX	538			I	N	Y
35 33 506	Liberty City WSC	322714	945656		124CZWX	515			U	N	Y
35 33 601	North Chapel School	322615	945345	5	124CZWX	854	1951		P	M	N
35 33 602	[redacted] Well 17	322615	945345	5	NOT-APPL	3740	1948			N	N
35 33 801	Texas Water Corp.	322345	945615	5	124CZWX	507	1954		P	M	Y
35 33 802	Texas Water Corp.	322354	945505		124CZWX	438	1933		P	H	Y
35 33 803	[redacted]	322345	945615	5	124CZWX	388	1966		H	M	Y
35 33 804	[redacted] Well 4	322345	945615	5	NOT-APPL	3854	1955			N	N
35 33 901	City of Kilgore Well 1	322254	945241		124CZWX	875	1931	W	P	M	Y
35 33 902	City of Kilgore Well 3	322254	945241		124CZWX	906	1934	W	P	M	Y
35 33 903	[redacted]	322345	945345	5	124CZWX	446	1938		H	N	Y
35 33 904	Ellerd Truckline	322317	945340		124CZWX	528	1931		P	M	Y
35 33 905	Warren Petroleum Corp.	322345	945345	5	124CZWX	505	1947		U	N	Y
35 33 906	Tex-Water Corp.	322345	945345	5	124CZWX	950	1931		U	M	N
35 33 907	Tex-Water Corp.	322322	945420		124CZWX	650	1931		P	M	Y
35 33 908	Tex-Water Corp.	322306	945400		124CZWX	527	1951		P	N	Y
35 33 909	Tex-Water Corp.	322305	945242		124CZWX	501	1956		P	N	Y
35 33 910	Lacy Water Dept.	322345	945345	5	124CZWX	512	1948		P	M	Y
35 33 911	Tex-Water Corp.	322347	945458		124CZWX	915	1931		P	M	Y
35 33 912	[redacted] Well 30	322345	945345	5	NOT-APPL	3605	1946			N	N
35 33 913	[redacted]	322345	945345	5	124CZWX				H	N	Y
35 33 914		322345	945345	5	124CZWX	528			H	N	Y
35 33 915	J&J PROPERTIES	322432	945427	1	124CZWX	615	08191988	W	C	M	N
* 35 34 101	Longview Country Club	322934	945051	1	124CZWX	412	1960	W	P I	M	Y
* 35 34 102	Amoco Pipeline	322843	945105		124CZWX	379	1965	W	U	C	Y
35 34 103	[redacted]	322845	945115	5	NOT-APPL	3480	1948			N	N

16-10

Well 16

RECORDS OF WELLS, SPRINGS, AND TEST HOLES
COUNTY - Gregg

WELL	OWNER	LAT.	LONG.	SOURCE OF COORDS.	WATER BEARING UNIT	DEPTH OF WELL (FT.)	DATE COM-PLETED	WELL TYPE	USE OF WATER	WATER LEVEL AVAIL.	WATER QUAL. AVAIL.
35 34 105	[redacted]	322845	945153	1	124CZWX	346	09061988	W	S	N	N
35 34 201	Lone Star Production Co.	322740	944743		124CZWX	430	1937		U	M	Y
35 34 202	Premier Oil & Refining Co.	322845	944845	5	124CZWX	281	1937		U	M	Y
35 34 203		322845	944845	5	124CRRZ					N	N
35 34 204		322845	944845	5	124CZWX					N	N
35 34 206		322845	944845	5	124CZWX					N	N
35 34 301	[redacted] Well 1	322845	944615	5	NOT-APPL	7398	1941			N	N
35 34 302	Wickham Packing Co.	322845	944615	5	NOT-APPL	6850	1952			N	N
35 34 303		322845	944615	5	110TRRC	30			H	N	Y
35 34 401	Gregg Home for the Aged	322616	945146		124CZWX	190	1935		P	N	Y
35 34 402	Gregg Home for the Aged	322615	945115	5	124CZWX	455	1960		P	M	Y
35 34 403	[redacted]	322622	945228		124CZWX	800	1931		U	C	N
35 34 404	[redacted]	322615	945115	5	124CZWX	911	1956		I	N	Y
35 34 405	Delta Drilling Co.	322615	945115	5	124CZWX	604	1955		U	N	Y
35 34 406	[redacted] Well 11	322615	945115	5	NOT-APPL	3589	1949			N	N
35 34 501	Atlantic Pipeline Co.	322642	944841		124CZWX	681	1949		H	M	Y
35 34 502	Atlantic Pipeline Co.	322615	944845	5	124CZWX	29	1964		H	M	N
35 34 503	Mobil Pipeline Co.	322615	944845	5	124CZWX	218	1931		U	N	Y
35 34 504	Texaco, Inc.	322615	944845	5	124CZWX					N	N
35 34 601	Pine Meadows Campground	322558	944718		124CZWX	299			P	N	Y
35 34 602		322615.	944615	5	124QNCT					N	N
35 34 701	City of Kilgore Well 6	322345	945115	5	124CZWX	827	1947	W	P	M	Y
35 34 702	City of Kilgore Well 4	322302	945216		124CZWX	771	1934	W	P	M	Y
35 34 703	[redacted]	322345	945115	5	124CZWX	582	1938		H	M	Y
35 34 801	Fredonia School	322407	944802		124CZWX	450	1948		P	M	Y
35 34 802	Danville School	322408	944858		124CZWX	300	1944		P	M	Y

16-11

RECORDS OF WELLS, SPRINGS, AND TEST HOLES
COUNTY - Gregg

WELL	OWNER	LAT.	LONG.	SOURCE OF COORDS.	WATER BEARING UNIT	DEPTH OF WELL (FT.)	DATE COM-PLETED	WELL TYPE	USE OF WATER	WATER LEVEL AVAIL.	WATER QUAL. AVAIL.
35 34 803	[redacted]	322450	944835		124CZWX	390	1964		P	N	Y
35 34 804		322345	944845	5	124CZWX					N	N
35 34 901	[redacted]	322415	944549		124CZWX	300	1963		I H S	N	Y
35 35 401	United Gas Pipeline Co.	322723	944333		124CZWX	378	1931		U	M	Y
35 35 402	United Gas Pipeline Co.	322723	944339		124CZWX	320	1955		N	C	Y
35 35 403	[redacted]	322615	944345	5	124CZWX					N	N
35 35 701	Gregg County Airport	322333	944313		124CZWX	464	1941		P	M	Y
35 35 901	Southwestern Gas and Electric Co.	322234	943835		124CZWX	183	1950		H	N	Y
35 35 902	Southwestern Gas and Electric Co.	322234	943835		124CZWX	183	1950		H	M	Y
35 35 903	[redacted]	322305	943814		124CZWX	448	1963		H	M	Y
35 35 904		322345	943845	5	124CZWX					N	N
35 35 905		322345	943845	5	124CZWX					N	N
35 36 701	[redacted]	322307	943535		124CZWX	39	1959		U	H	Y
35 36 702	[redacted] Well 1	322345	943615	5	NOT-APPL	7160	1955			N	N
35 36 703		322345	943615	5	124CZWX	39			H	N	Y
35 41 301	Bareco Wax Corp.	322115	945345	5	124CZWX	625			U	M	N
35 41 302	Bareco Wax Corp.	322221	945326		124CZWX	425	1946		N	M	Y
35 41 303	Humble Oil & Refining Co.	322218	945300		124CZWX	908	1931		U	M	Y
35 42 201	[redacted] Well 1	322115	944845	5	NOT-APPL	7630	1959			N	N

REFERENCE 17

"County and City Data Book", U.S. Bureau of the Census, 1988.

A Statistical Abstract Supplement

County and City Data Book

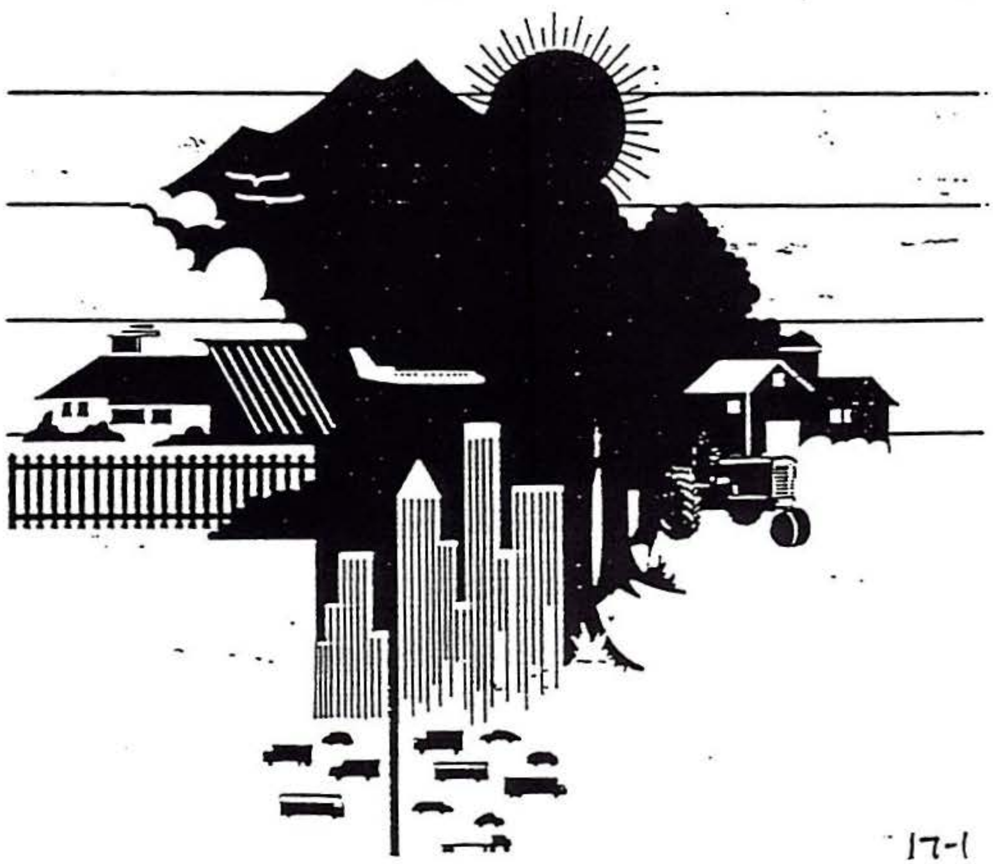
1988

States

Counties

Cities of 25,000 or More

Places of 2,500 or More



U.S. Department of Commerce

C. William Verity, Secretary
Donna C. Tuttle, Deputy Secretary
Robert Ortner, Under Secretary for Economic Affairs

BUREAU OF THE CENSUS
John G. Keane, Director

17-1

BUREAU OF THE CENSUS

John G. Keane, Director
C.L. Kincannon, Deputy Director
Roland H. Moore, Associate Director for Field Operations

DATA USER SERVICES DIVISION
Gerard C. Iannelli, Chief

ACKNOWLEDGMENTS

This volume was prepared under the general direction of Marie Argana, Assistant Division Chief, and under the general supervision of Glenn W. King, Chief, Statistical Compendia Staff. David C. Shaw was responsible for coordination of procedures, compilation, computer systems design, and technical supervision, assisted by Wanda K. Cevis. Subject development and analytical review was provided by Lars B. Johanson, Edward C. Jagers, and Rosemary E. Clark. Kathleen A. Siemer was responsible for computer operations, assisted by Mary Grace Lynch. Ellen M. Ewell provided publications planning and layout. Deloris W. Byers was responsible for text preparation. Statistical assistance was provided by Cheryl L. Slacum and clerical support was provided by Elsie F. Kesterson and Mary K. Cator.

The staff of Publications Services Division, Walter C. Odom, Chief, performed publication planning, design, composition, editorial review, and printing planning and procurement. Nelsa Brown provided publication coordination and editing. Ernest A. Schwartz provided design and graphics services.

May 1988

Library of Congress Card No. 52-4576

SUGGESTED CITATION

U.S. Bureau of the Census, *County and City Data Book, 1988*
U.S.Government Printing Office: 1988

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, Tel. (202) 783-3238, or any U.S. Department of Commerce district office.

17-2

Table B. Counties — Population Characteristics and Households

County	Population characteristics—Con.												Households				
	1984—Con.									1980			1985			1980	
	Percent—									Percent—							Percent
	Under 5 years	5 to 14 years	15 to 24 years	25 to 34 years	35 to 44 years	45 to 54 years	55 to 64 years	65 to 74 years	75 years and over	American Indian, Eskimo, and Aleut	Asian and Pacific Islander	Hispanic[1]	Number	Percent change, 1980-1985	Persons per household	Number	Female family householder[2]
	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
TEXAS—Con.																	
Falls	S	S	S	S	S	S	S	S	S	.14	.12	9.42	6 800	-1.8	2.53	6 920	10.6
Fannin	6.9	14.2	11.9	11.5	12.0	10.0	11.7	12.0	9.9	.25	.11	1.33	9 300	.3	2.54	9 257	6.8
Fayette	S	S	S	S	S	S	S	S	S	.14	.08	5.14	7 900	5.4	2.56	7 487	5.7
Fisher	S	S	S	S	S	S	S	S	S	.17	.10	18.79	2 100	-4.7	2.67	2 204	4.4
Floyd	S	S	S	S	S	S	S	S	S	.23	.12	33.89	3 100	-4.4	2.88	3 307	5.2
Foard	S	S	S	S	S	S	S	S	S	.19	.09	11.03	700	-14.4	2.48	880	7.1
Fort Bend	10.9	18.4	13.0	25.0	16.2	7.4	5.1	2.5	1.5	.21	2.85	20.37	57 600	44.5	3.15	39 840	6.8
Franklin	S	S	S	S	S	S	S	S	S	.28	.15	1.13	2 700	4.0	2.59	2 616	5.0
Freestone	S	S	S	S	S	S	S	S	S	.15	.24	2.03	6 400	14.9	2.58	5 608	8.3
Frio	S	S	S	S	S	S	S	S	S	.17	.12	68.29	4 100	1.8	3.48	4 041	10.4
Gaines	S	S	S	S	S	S	S	S	S	.23	.13	30.63	4 500	8.0	3.23	4 190	5.0
Galveston	8.4	15.1	16.9	18.5	13.1	9.9	8.9	5.7	3.4	.27	.90	12.02	77 400	11.7	2.72	69 254	10.5
Garza	S	S	S	S	S	S	S	S	S	.41	.24	24.33	1 900	5.3	2.80	1 642	7.7
Gillespie	S	S	S	S	S	S	S	S	S	.14	.03	10.04	6 200	18.0	2.44	5 219	5.5
Glasscock	S	S	S	S	S	S	S	S	S	.15	.08	28.63	400	-3.3	3.48	387	2.1
Goliad	S	S	S	S	S	S	S	S	S	.08	.08	35.61	1 900	8.5	2.91	1 777	8.2
Gonzales	S	S	S	S	S	S	S	S	S	.08	.07	28.80	6 600	10.9	2.78	5 949	9.1
Gray	9.8	13.3	14.2	15.1	11.7	10.5	10.3	8.7	6.3	.59	.33	4.41	10 500	3.1	2.53	10 224	5.8
Grayson	7.4	14.6	14.5	15.1	13.2	9.4	10.3	8.7	6.8	.70	.21	1.50	38 800	8.4	2.58	33 972	8.3
Gregg	8.5	15.2	16.8	17.3	13.1	9.4	8.8	6.4	4.7	.38	.39	2.02	41 200	14.7	2.67	35 684	9.0
Grimes	S	S	S	S	S	S	S	S	S	.03	.70	9.07	5 800	20.3	2.86	4 857	11.5
Guadalupe	7.8	15.7	16.0	15.9	14.1	10.1	9.2	6.7	4.6	.24	.45	25.42	19 000	21.1	2.83	15 733	8.3
Hale	9.8	17.2	17.0	14.3	11.5	10.0	8.2	7.0	5.0	.24	.28	33.74	12 400	.5	2.91	12 385	6.9
Hall	S	S	S	S	S	S	S	S	S	.13	.07	15.05	2 000	-7.2	2.38	2 175	4.9
Hamilton	S	S	S	S	S	S	S	S	S	.16	.19	2.13	3 300	-4.7	2.34	3 423	4.8
Hansford	S	S	S	S	S	S	S	S	S	.40	.24	17.95	2 400	6.0	2.71	2 289	4.8
Hardeman	S	S	S	S	S	S	S	S	S	.44	.08	8.01	2 400	-2.7	2.62	2 478	6.1
Hardin	8.7	17.5	14.4	17.2	13.2	9.6	8.9	6.4	4.1	.10	.09	1.40	14 700	7.2	2.89	13 727	7.4
Harris	8.8	14.9	18.4	22.9	14.0	8.6	6.5	3.8	2.2	.22	1.92	15.32	1 035 600	19.1	2.67	869 882	10.0
Harrison	9.1	16.9	14.7	15.3	13.5	9.1	8.6	7.3	5.5	.18	.12	1.53	19 900	10.5	2.83	18 049	10.7
Hartley	S	S	S	S	S	S	S	S	S	.20	.33	4.46	1 300	-6.4	2.73	1 381	3.9
Haskell	S	S	S	S	S	S	S	S	S	.22	.16	15.47	2 900	-1.8	2.48	2 981	5.0
Hays	8.4	13.3	22.5	15.1	10.8	7.0	7.1	4.7	2.9	.20	.30	30.51	18 700	48.4	2.78	12 583	6.9
Hemphill	S	S	S	S	S	S	S	S	S	.49	.11	10.28	1 800	-1.8	2.94	1 837	4.5
Henderson	6.8	13.8	13.4	12.0	11.5	11.2	14.8	10.8	5.6	.22	.14	1.45	20 000	24.1	2.57	18 087	6.8
Hidalgo	9.6	21.8	17.9	15.1	11.4	8.0	7.3	5.4	3.2	.10	.15	81.28	99 800	31.6	3.54	75 816	12.1
Hill	7.8	13.7	13.0	12.5	11.0	9.4	11.9	11.9	8.8	.18	.16	5.65	10 500	8.9	2.52	9 683	7.3
Hockley	11.2	19.2	17.4	16.0	12.1	7.5	6.7	6.2	3.5	.31	.05	27.03	7 800	4.4	3.11	7 522	5.7
Hood	7.3	13.8	13.0	16.1	12.2	10.3	12.9	9.4	4.5	.34	.20	2.68	9 700	43.6	2.60	6 759	5.0
Hopkins	8.1	14.3	15.2	14.8	13.2	9.8	9.6	9.4	6.8	.14	.11	1.57	10 900	14.2	2.60	9 528	7.5
Houston	7.7	13.6	12.7	15.6	11.4	10.9	10.1	10.1	7.3	.16	.11	3.63	7 500	4.7	2.52	7 204	10.6
Howard	7.8	15.4	16.3	13.3	12.2	11.2	12.5	6.9	4.6	.28	.48	21.05	13 300	11.4	2.62	11 965	7.3
Hudspeth	S	S	S	S	S	S	S	S	S	.44	.15	58.25	700	-3.9	3.41	822	7.3
Hunt	7.8	14.3	17.2	14.4	13.1	10.4	9.5	7.3	5.6	.31	.28	2.29	24 600	20.8	2.58	20 331	7.7
Hutchinson	9.8	15.4	13.1	18.4	11.1	9.3	10.3	8.2	4.3	.53	.33	4.80	10 200	3.4	2.72	9 837	4.8
Irion	S	S	S	S	S	S	S	S	S	.14	-	18.54	700	38.8	2.82	507	4.5
Jack	S	S	S	S	S	S	S	S	S	.45	.18	1.31	2 900	-.1	2.61	2 894	4.7
Jackson	S	S	S	S	S	S	S	S	S	.08	.04	18.68	4 600	-.8	2.88	4 685	8.0
Jasper	8.1	17.3	14.6	13.8	12.4	9.8	8.9	6.3	5.8	.10	.07	1.24	11 100	4.0	2.87	10 708	8.1
Jeff Davis	S	S	S	S	S	S	S	S	S	.18	.08	47.18	600	5.9	2.79	592	5.9
Jefferson	8.5	14.5	17.4	16.8	11.5	9.8	10.0	7.0	4.7	.18	1.06	4.10	91 700	1.8	2.71	90 245	10.6
Jim Hogg	S	S	S	S	S	S	S	S	S	-	.02	90.54	1 600	1.9	3.41	1 584	11.9
Jim Wells	10.8	19.0	18.3	15.7	11.8	8.5	8.3	6.4	3.6	.10	.11	67.18	12 300	10.2	3.25	11 165	9.4
Johnson	8.5	16.9	15.3	18.3	15.2	9.1	7.9	6.0	4.8	.19	.20	4.10	29 900	29.2	2.89	23 122	6.7
Jones	S	S	S	S	S	S	S	S	S	.24	.34	14.68	5 800	5.4	2.52	5 357	5.4
Karnes	S	S	S	S	S	S	S	S	S	.07	.12	42.99	4 400	-3.2	3.00	4 522	9.2
Kaufman	8.2	16.7	13.3	15.9	13.4	10.5	8.5	7.8	5.8	.17	.22	4.24	16 700	26.9	2.54	13 154	9.5
Kendall	S	S	S	S	S	S	S	S	S	.24	.19	13.22	5 000	32.7	2.67	3 801	5.4
Kenedy	S	S	S	S	S	S	S	S	S	.74	-	82.87	200	13.1	3.18	169	3.8
Kent	S	S	S	S	S	S	S	S	S	-	.09	7.77	400	1.9	2.60	431	3.0
Kerr	6.6	11.8	11.9	12.4	10.3	10.0	13.3	13.8	9.8	.22	.23	13.47	13 800	23.8	2.42	11 171	7.2
Kimble	S	S	S	S	S	S	S	S	S	.05	.02	17.40	1 700	10.9	2.39	1 564	7.0
King	S	S	S	S	S	S	S	S	S	.24	-	9.85	100	-5.6	2.75	154	2.6
Kinney	S	S	S	S	S	S	S	S	S	.53	.13	57.48	800	7.9	2.90	771	7.5
Kleberg	9.7	16.3	23.1	18.4	9.7	8.2	7.1	4.4	3.1	.22	1.41	52.19	11 000	7.3	2.95	10 290	9.3
Knox	S	S	S	S	S	S	S	S	S	.11	.08	17.70	2 100	4.5	2.52	2 042	8.5
Lamar	7.1	15.3	16.5	12.0	13.4	9.2	10.1	9.3	7.1	.51	.22	.90	16 800	6.7	2.52	15 710	9.6
Lamb	S	S	S	S	S	S	S	S	S	.29	.10	30.29	5 800	-9.0	2.88	6 408	6.2
Lampasas	S	S	S	S	S	S	S	S	S	.24	.84	10.70	5 400	22.9	2.50	4 414	7.0
La Salle	S	S	S	S	S	S	S	S	S	.07	.11	73.70	1 900	11.0	2.96	1 725	10.6
Lavaca	S	S	S	S	S	S	S	S	S	.17	.18	5.92	6 800	-5.0	2.66	7 150	5.9
Lee	S	S	S	S	S	S	S	S	S	.24	.18	6.02	4 700	21.4	2.77	3 858	8.3

[1]Hispanic persons may be of any race. [2]No spouse present. [3]Householder living alone.

REFERENCE 18

Keith Westberry, Fluor Daniel, Inc., "Drinking Water Well Distance Calculations", August 1993.

DISTANCE TO DRINKING WATER WELL CALCULATIONS

-See attached map for location of wells.

[redacted] Residence

Distance to residence from the center of the site = 2.6875 in.

Conversion: 2.625 inches = 1 mile

Calculation: 2.6875/2.625 = 1.02 miles

[redacted] Residence

Distance to residence from the center of the site = 3.9375 in.

Conversion: 2.625 inches = 1 mile

Calculation: 3.9375/2.625 = 1.49 miles

Reference 12 was used to calculate distances.

REFERENCE 19

Keith Westberry, Fluor Daniel, Inc., "Target Distance Population Counts", August, 1993.

Target Distance Population Counts

	Ring	# of Homes	Residents
*	0 - 1/4 mile	#57	152
*	1/4 - 1/2 mile	25	67
*	1/2 - 1 mile	209	558
●	1 - 2 mile	N.A.	19,978
●	2 - 3 mile	N.A.	15,141
●	3 - 4 mile	N.A.	9,548
	Totals	**209+**	**45,444**

References:

* * U.S.G.S. 7.5 Minute Topographic Map, Lakeport Quadrangle (Ref. 12).
* * "County and City Data Book", U.S. Bureau of the Census, 1988. (2.67 per./home) (Ref. 17)
* ● Printout of the Gems Software Package, 1993. (Ref. 20)
* # Home count includes the # of homes in the adjacent trailer park (Ref. 13).

H:\06635332\230\POP.CNT

REFERENCE 20

Printout of the GEMS Software Package for the Dixie (TEI) Petro-Chemical site, 1993.

COVERAGE

========

STATE	COUNTY	STATE NAME	COUNTY NAME
48	183	Texas	Gregg Co
48	203	Texas	Harrison Co
48	459	Texas	Upshur Co

CENTER POINT AT STATE : 48 Texas

COUNTY : 183 Gregg Co

REGION OF THE COUNTRY

========================

Zipcode found: 75602 at a distance of 3.0 Km

STATE	CITY NAME	FIPSCODE	LATITUDE	LONGITUDE
TX	LONGVIEW	48183	32.4917	94.7400

26-1

CENSUS DATA

============

Dixie (TEI) Petro-Chemical

LATITUDE 32:29:20 LONGITUDE 94:42:30 1990 POPULATION

KM	0.00-.400	.400-.800	.800-1.60	1.60-3.20	3.20-4.80	4.80-6.40	SECTOR TOTALS
S 1	0	0	0	2534	3792	5493	11819
S 2	0	0	0	4694	0	0	4694
S 3	0	0	1329	2483	5709	0	9521
S 4	495	0	435	10267	5640	4055	20892
RING TOTALS	495	0	1764	19978	15141	9548	46926

STAR STATION

=============

WBAN NUMBER	STATION NAME	LATITUDE	LONGITUDE	PERIOD OF RECORD	DISTANCE (km)
13972	TYLER/POUNDS TX	32.3667	95.4000	1950-1954	66.3
13957	SHREVEPORT LA	32.4667	93.8167	1970-1974	83.6
13977	TEXARKANA/WEBB AR	33.4500	94.0000	1963-1967	125.5
93987	LUFKIN/ANGELINA CO TX	31.2333	94.7500	1967-1971	139.5
93992	ELDORADO/GOODWIN AR	33.2167	92.8000	1950-1954	195.6
13960	DALLAS/LOVE TX	32.8500	96.8500	1967-1971	204.3
03927	FT WORTH/REGIONAL TX	32.9000	97.0333	1957-1971	222.1

U.S. SOIL DATA

STATE : TEXAS

LATITUDE : 32:29:20 LONGITUDE : 94:42:30

THE STATION IS INSIDE H.U. 12010002

GROUND WATER ZONE	:	10			
RUNOFF SOIL TYPE	:	2			
EROSION	:	1.1210E-03			CM/MONTH
DEPTH TO GROUND WATER BETWEEN	:	1.0000E+02	AND	3.0000E+02	
FIELD CAPACITY FOR TOP SOIL	:	7.2000E-02			
EFFECTIVE POROSITY BETWEEN	:	2.0000E-02	AND	3.0000E-01	
SEEPAGE TO GROUNDWATER BETWEEN	:	4.6330E+03	AND	1.3900E+04	CM/MONTH
DISTANCE TO DRINKING WELL	:	2.8000E+04			CM

U.S. CITY

==========

STATE	PLACE NAME	FIPSCODE	LATITUDE	LONGITUDE
TX	LONGVIEW	48183	32.4998	94.7612

5-02

REFERENCE 21

"Community Information and Data Book", Longview Chamber of Commerce, 1993.

Longview

Chamber of Commerce

410 North Center Street
Post Office Box 472
Longview, Texas 75606-0472
903 / 237-4000
1-800-637-0633
Fax - 903 / 237-4049

21-1

Longview

Chamber of Commerce

Is pleased to present our

Community Information and Data Book

For further information, contact us at:
410 N. Center St., P.O. Box 472
Longview, Texas 75606
903/237-4000 Fax: 903/237-4049
800/637-0633

21-2

Longview

Chamber of Commerce

Community Information and Data Book

TABLE OF CONTENTS

Longview

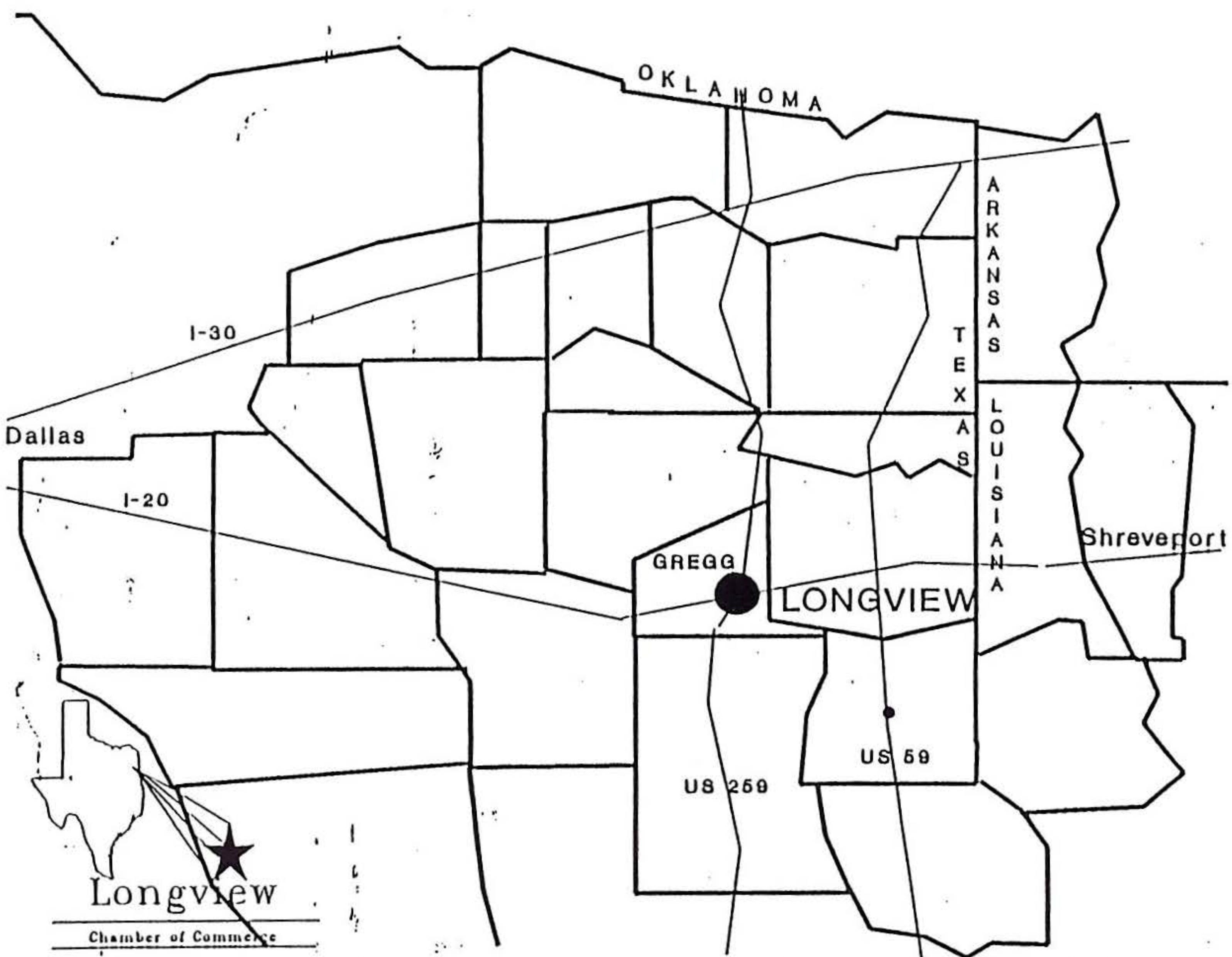
Chamber of Commerce

Where's Longview, Texas?

Longview is the central city of the Longview-Marshall Metropolitan Statistical Area. It is located on the U.S. Interstate 20 and U.S. Highway 80 corridor that stretches 275 miles through a chain of metropolitan statistical areas from Shreveport-Bossier City, Louisiana through Dallas-Fort Worth. Dallas lies 125 miles west of Longview, and Shreveport is 60 miles east.

Approximate driving times between Longview and Dallas is 120 minutes; U.S. Interstate 30, 50 minutes; Houston and U.S. Interstate 10, 320 minutes; Shreveport, 50 minutes; Texarkana, 120 minutes; U.S. Interstate 45, 120 minutes.

Longview is the visitors center for the rolling hills, lakes and pine forests of East Texas. The tranquility and recreational opportunities of the East Texas area attract weekenders and vacationers from throughout the nation. This quality of life, along with the workforce, economic, cost of living and locational advantages, are some of the reasons that Longview has been the choice of business and families for over 40 years.


OKLAHOMA
ARKANSAS
TEXAS
LOUISIANA
I-30
Dallas
I-20
GREGG
LONGVIEW
Shreveport
US 259
US 59
Longview
Chamber of Commerce

Longview

Chamber of Commerce

What Kind of Place To Live Is Longview?

In 1991, Longview was ranked by the American Chamber of Commerce Cost of Living Index Survey as being one of the two cities in Texas with the most favorable cost of living, as compared to 24 other Texas communities.

There are 33 lakes from 2,500 to 25,000 acres in size, located within one hour's drive of Longview. The community has 25 parks that provide facilities for baseball, softball, football, soccer, swimming, hiking, biking, running, picnicking, racquetball, tennis, basketball and exploring. There are 47 tennis courts, an indoor aquatic center and four eighteen hole golf courses. Longview also has bowling alleys, an indoor soccer arena, skating rinks, health spas, racquet clubs and miniature golf courses.

The community also has 16 movie screens, a new public library, the LeTourneau University library, the Gregg County Historical Museum, the Longview Museum and Arts Center and the Caddo Indian Museum. The Municipal Activity Complex includes the 40,000 square foot Maude Cobb Convention Center, a rodeo arena, fair grounds, pavillions and an exhibits building.

Longview has two major regional hospitals with over 390 beds; six nursing homes with over 700 beds; an 80 bed psychiatric hospital; over 180 physicians; over 60 dentists; over 15 chiropractors; and over 500 RN's and LVN's:

There are more than 115 places of worship including two Catholic churches and a synagogue.

Longview

Chamber of Commerce

What Is There To See Around Longview?

Longview serves as the hub for visitors to the East Texas area. Within one hour's drive are many sites and events that bring people from all over the world. In the historic city of Jefferson, there are the ante-bellum homes and the moss-draped cypress swamps of Caddo Lake, the only natural lake in Texas. Marshall is the City of Lights each Christmas, as they cover their downtown area with millions of lights. Kilgore is the home of the Oil Museum, visited by tens of thousands each year. Tyler is the Rose Capitol of the world and home of the annual Rose Festival.

Longview is the home of the world famous Reo Palm Isle and Cace's Seafood Restaurant. It is also the site of the annual Great Texas Balloon Race, one of the first and largest such events in the south. Longview also hosts the annual Rubicon and Texas Chainring Challenge Bicycle competition and tour, and the National Christian College Athletic Association's national college soccer championship tournament at LeTourneau University.

Longview also sits in the heart of the Azalea and Dogwood Trails of East Texas, and the explosion of colors in the fall foliage around Longview is breathtaking. There are dozens of State Parks for camping, hiking and picnicking, and several fifty mile bicycle routes through the rolling hills and pine forests of the area.

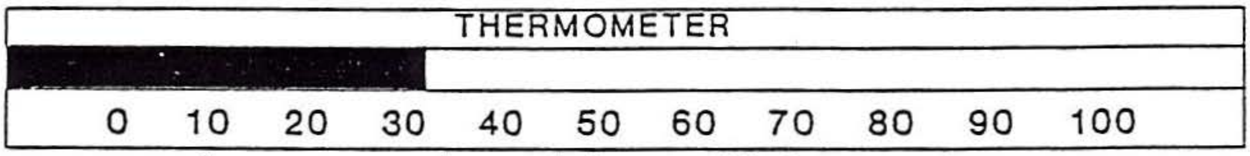
There are several nationally known fishing lakes in the area, including Lake Fork, Lake O'Pines, Toledo Bend, Martin Creek, Monticello, Caddo and many others.

Visitors to scenic East Texas call Longview their home away from home.

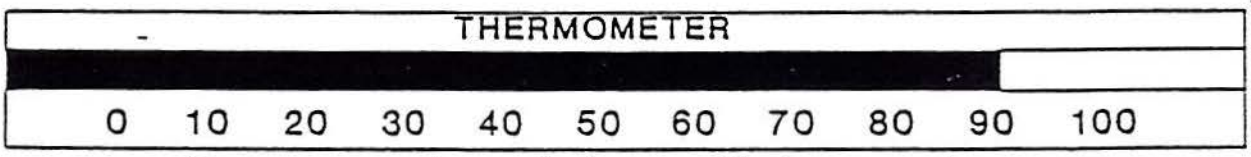
LONGVIEW, TEXAS

Longview
Chamber of Commerce

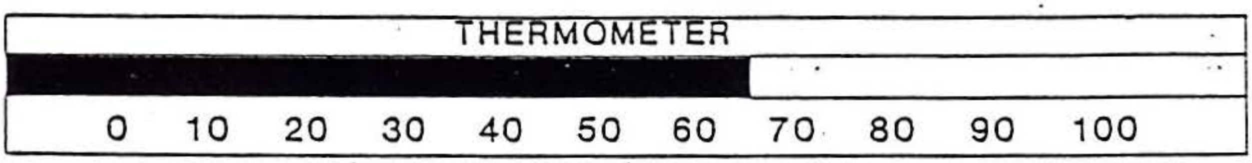
Climate



Average number of days with temperatures
reaching below 32 degrees = 53.4



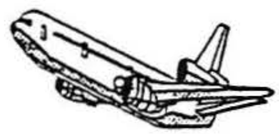
Average number of days with temperatures
reaching above 90 degrees = 89.5



Average annual temperature

Average annual rainfall = 42"
Average annual growing season = 247 days
Average snowfall (1 out of 3 years) = 4"
Average first freeze date = Nov.16
Average last freeze date = Mar.14

Longview
Chamber of Commerce



Transportation, Longview

Longview is served by Gregg County Airport, which is less than 10 miles from downtown. The facility includes an FAA Control Tower and state of art landing, lighting and navigation systems including Omni-Range, Tacan, ILS High Intensity Approach Lighting, Rotating Beacon, Runway Visible Range, VASI's on four of six approaches, and Approach Radar.

The Airport includes three 150' wide runways with 75' wide interconnecting taxiways. NW-SE Runway 13-31 is a grooved 10,000' runway capable of accommodating any aircraft in the air today; up to and including 320,000 pounds, dual tandem. N-S Runway 17-35 is 6,109' long, and NE-SW Runway 4-22 is 5,204' long.

Private and Commercial service is provided by FBO's and by American Eagle (American Airlines) and Atlantic Southeast (Delta Airlines).

Motor Freight service in Longview is provided by dozens of companies, some of which are listed below:

ABF Freight Systems
Airborne Express
Berry Transportation
Central Freight Lines
Consolidated Freight Ways
Conway Southwest
Emery&Purolator Worldwide
Federal Express
GAF Transport
Groendyke Transport
John Barbour Trucking
Ligon Nationwide
Lyn Neta
Mississippi Chemical
NDC Freight
Red Arrow Freight
Roadway Express
Southwestern Motor Trans.
Tex-Pack Express
Transcon Express
Truckers Express
United Parcel Service

Rail service is provided by Amtrak, with one train per day; Union Pacific Railroad, with 23 trains per day; and Atcheson, Topeka & Santa Fe Railroad, 2 trains per day.

How is Longview's Local Government Structured?

Longview

Chamber of Commerce

Longview's municipal government utilizes a Council-Manager format. The Council is composed of seven people, six of whom are elected from geographic districts, and the Mayor is elected at-large. At least two of the seven come up for election each year, and they serve three year terms. The Council members do not receive financial compensation. Longview operates under a Home Rule Charter.

The City Limits of Longview incorporates over 50 square miles, and has over 400 miles of paved streets. The City has an operating budget of about $38 million, and has a total long-term bonded indebtedness of less than $50 million.

Longview has 166 police officers and 148 fire fighters. The fire insurance key rate is $0.17, with a class designation of 4431.

Longview is the County Seat of Gregg County, and parts of its City Limits extend into Harrison County, to the east. Gregg and Harrison Counties compose the Gregg-Harrison Census Metropolitan Statistical Area, with Longview as its central city. It is the largest MSA is East Texas. The businesses of Longview have a service area of about seven counties, and over 300,000 people. Longview is ranked fourth in Texas in retail sales per household.

Gregg and Harrison Counties are governed by County Commissioners Courts, which are composed of four County Commissioners elected from geographic precincts, and chaired by the County Judge, who is elected at-large. Other elected County officials include the Sheriff, District Judges, Tax Collector, County Clerk, Justices of the Peace, and Constables. All of the elected officials in the Counties are compensated by salaries and benefits.

Longview

Chamber of Commerce

Who Provides the Utilities in Longview?

Longview's raw water supply is from two separate sources. Lake Cherokee provides 16,000 acre feet of water per year. The Sabine River and Lake Fork Reservoir provide a total of 26,600 acre feet per year.

The raw water is treated in two separate facilities. The Cherokee Treatment Plant and the Sabine River Treatment Plant can produce up to 42 million gallons per day, with the potential of expansion by several million gallons. The average daily consumption rate is 12 million gallons per day, and the highest recorded consumption in a day is 39 million. The minimum water pressure in the distribution system is 35 psi, and the maximum is 110 psi.

Longview's Wastewater Treatment facility utilizes primary, secondary, nitrification and tertiary treatment systems. The facility can treat 12 million gallons per day, and meets or exceeds EPA discharge standards.

Electricity is provided by Southwestern Electric Power Company. Fuel for generation is coal/lignite (88%), and natural gas (12%). Service may be at secondary, primary or transmission voltage, depending upon loads and customer needs. Rates are among the lowest in the area.

Natural Gas is provided by either ENTEX or Lone Star Gas, depending upon location within the community. The distribution pressure is 45 psig, with an average BTU rating of 1,050.

Telephone service is by Southwestern Bell. The local daily newspaper is the Longview News Journal with a distribution of over 30,000. Longview Cable Television offers 51 channels. There are 6 area television stations and 16 radio stations.

Longview

Chamber of Commerce

What Are the Utility Rates in Longview?

The rates for treated water in the City of Longview are as follows:

First 3,000 gallons	$13.54(2"meter)$42.33(4"meter)
Next 47,000 gallons	$ 1.46 per 1000 gallons
Next 100,000 gallons	$ 1.41 per 1000 gallons
Next 350,000 gallons	$ 1.13 per 1000 gallons
Next 4,500,000 gallons	$ 0.83 per 1000 gallons
All Over 5 million gallons	$ 0.76 per 1000 gallons

Sanitary Sewer Rates in Longview are based upon water consumption measured at the meter, and are:

First 3,000 gallons	$ 4.43
Each Added 1000 gallons	$ 0.51

As a general rate guide for natural gas, the following structure from one of the two gas companies is provided:

Net Monthly Rate for the

First 400 cubic feet	$10.97
Next 2,600 cubic feet	$ 0.59041 per 100 cubic feet
Next 7,000 cubic feet	$ 0.51941 per 100 cubic feet
Over 10,000 cubic feet	$ 0.50371 per 100 cubic feet

During the billing months of May through October, the rate for usage within the applicable allowable is $0.48371 per 100 cubic feet. The purchased gas adjustment is $0.08903 per 100 cubic feet.

Longview

Chamber of Commerce

What Are the Local Taxes in Longview?

The property taxing entities in Longview are the City of Longview, Gregg or Harrison County, and Longview, Pine Tree, Spring Hill or Hallsville Independent School Districts. The rates are based upon assessed valuation as determined by a central appraisal agency, and are stated in terms of rate per $100 of assessed valuation.

The tax rates are as follows:

City of Longview	$0.53340
County of Gregg	$0.24465
County of Harrison	$0.2650
Longview ISD	$0.39
Pine Tree ISD	$0.48
Spring Hill ISD	$0.50
Hallsville ISD	$0.49
Gregg County Education District	$0.8897
Harrison County Education District	$0.86

The combined effective property tax rate for specific locations within the Longview area are as follows:

For a location that is within

the City of Longview, Gregg Co., Longview ISD	$2.05775
the City of Longview, Gregg Co., Pine Tree ISD	$2.14775
the City of Longview, Gregg Co., Spring Hill ISD	$2.16775
the City of Longview, Harrison Co., Hallsville ISD	$2.1484
Gregg Co., Longview ISD	$1.52435
Gregg Co., Pine Tree ISD	$1.53
Gregg Co., Spring Hill ISD	$1.55
Harrison Co., Hallsville ISD	$1.615

The City of Longview receives a 1.5% Sales Tax. Gregg County receives 0.5%, and the State of Texas collects 6.25%, for a total sales tax of 8.25%. There are no State or City corporate or personal income taxes in Texas.

LONGVIEW, TEXAS

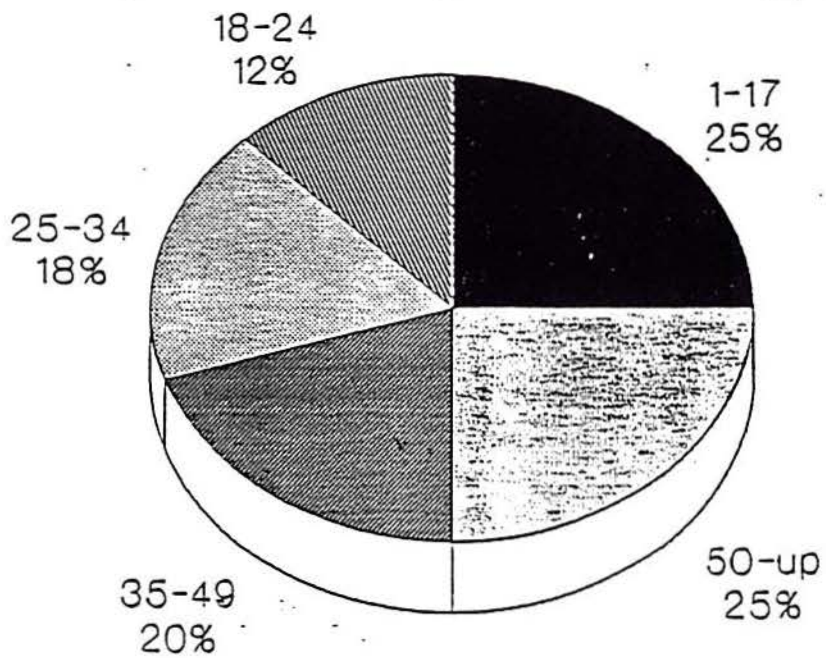
Age Distribution & Population

Longview

Chamber of Commerce

Historic

YEAR	CITY OF LONGVIEW	GREGG CO.	LONGVIEW-MARSHALL MSA
1960	40,050	69,436	115,030
1970	45,547	75,929	120,770
1980	62,762	99,487	151,752
1990	70,311	104,948	165,358



Projected

1995	75,450	113,912	175,116
2000	82,120	121,491	185,434

REFERENCE 22

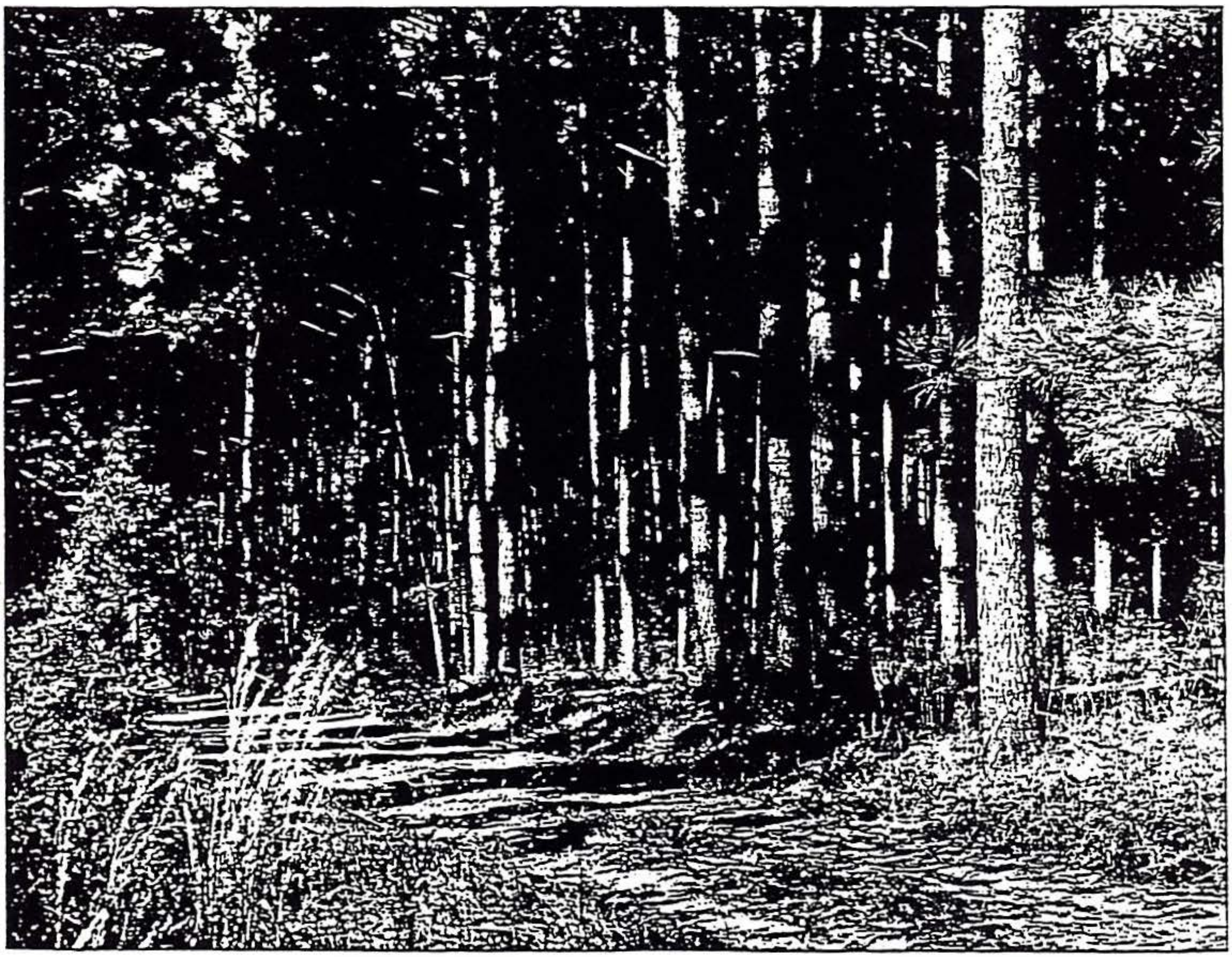
"Soil Survey of Upshur and Gregg Counties, Texas", U.S. Dept. of Agriculture, May, 1993.

United States Department of Agriculture

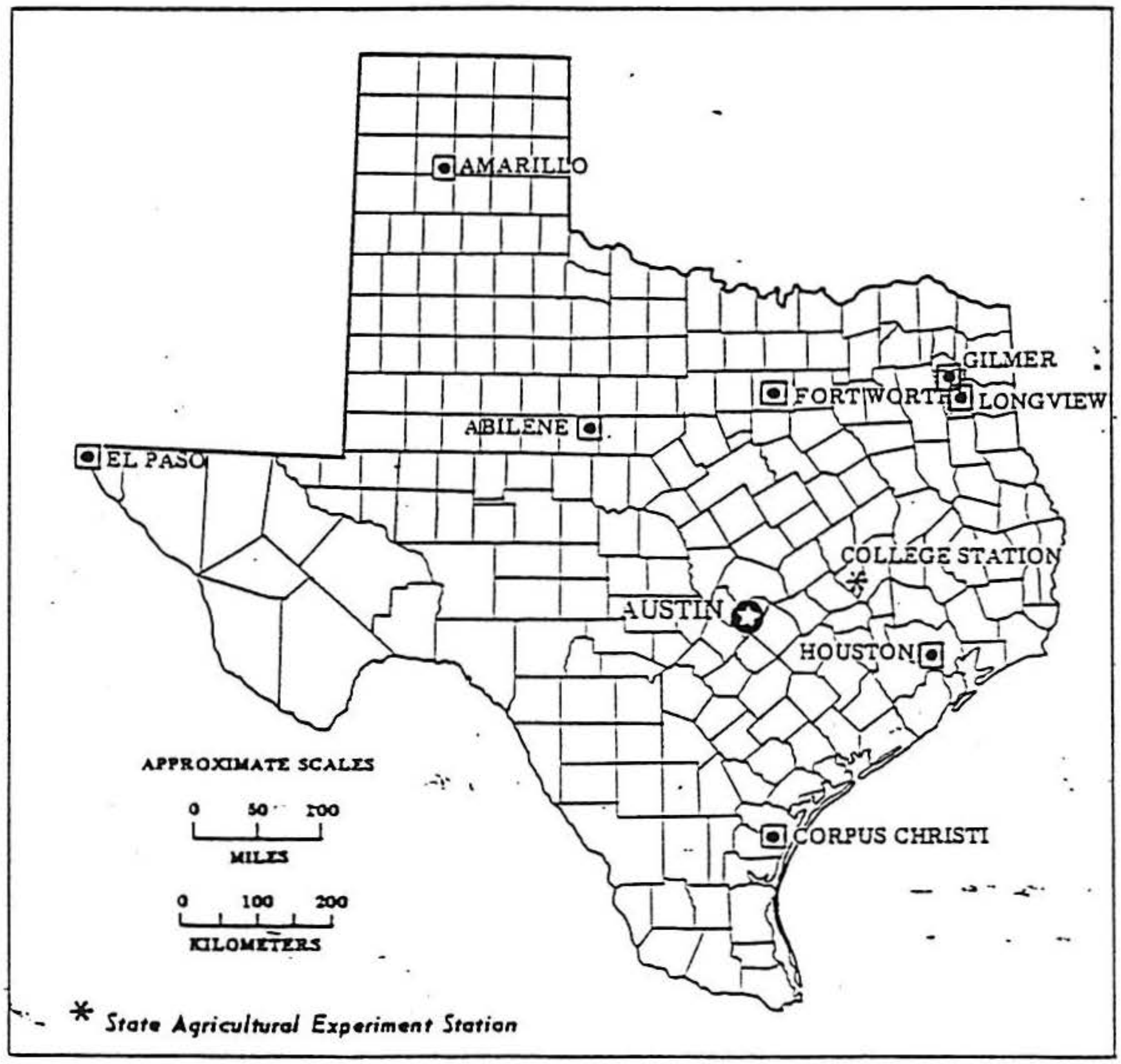
Soil Conservation Service

In Cooperation with the Texas Agricultural Experiment Station

Soil Survey of Upshur and Gregg Counties, Texas



27-1



Location of Upshur and Gregg Counties, Texas

soil survey of
Upshur and Gregg Counties, Texas

By Kirthell Roberts
Soil Conservation Service

Soils survey by Thomas L. Galloway, Gaylon L. Lane,
Kirthell Roberts, and Jesse R. Thomas, Jr.,
Soil Conservation Service

United States Department of Agriculture,
Soil Conservation Service
in cooperation with the
Texas Agricultural Experiment Station

UPSHUR AND GREGG COUNTIES are in central northeastern Texas. Gilmer is the county seat of Upshur County, and Longview is the county seat of Gregg County. The total area of the two counties is 873 square miles, or 558,720 acres. Elevation ranges from about 680 feet above sea level in central Upshur County to about 240 feet above sea level in southeastern Gregg County.

The counties are in the East Texas Timberlands Land Resource Area. The topography of the area is nearly level to hilly. The area has a well-defined drainage pattern and is dissected by many streams. The northern and southeastern parts of Upshur County drain into Little Cypress Creek from Kelsey Creek, Lilly Creek, Caney Creek, Gum Creek, and Walnut Creek. The extreme northeast corner of the county drains north into Big Cypress Creek and Lake O'the Pines. The southwestern part drains south into the Sabine River. Gregg County is bisected by the Sabine River. All drainage in Gregg County is into the Sabine River except the northernmost part, which drains into Little Cypress Creek.

Timber, livestock, and dairy farming are the major farming enterprises in the area. According to records of the local field office of the Soil Conservation Service, about 48 percent of the area is used for woodland, 29 percent for pasture and hay, 8 percent for crops, and the remaining 15 percent for urban and built-up areas or water areas.

The soils of the area formed mostly under forest vegetation. The soils on uplands are light colored and dominantly loamy or sandy. In unprotected sloping areas, they are subject to water erosion. The soils on flood plains are loamy or clayey. These soils are mostly along the Little Cypress Creek, Sabine River, and adjoining streams.

general nature of the area

This section provides general information about Upshur and Gregg Counties. It briefly describes the settlement and population, agriculture, natural resources, and climate of the area.

settlement and population

Upshur County was created and organized in 1846 from parts of Harrison and Nacogdoches Counties. It was named in honor of former U.S. Secretary of State A. P. Upshur.

The population of Upshur County, according to the 1980 census, is 28,595. Gilmer, the seat of Upshur County and its major city, has a population of 5,119.

Gregg County was created and organized in 1873 from parts of Upshur and Rusk Counties. It was named in honor of Confederate General John Gregg.

The population of Gregg County is 98,445. Longview, the seat of Gregg County and its major city, has a population of 63,763.

agriculture

Agriculture in the counties has changed drastically over the years. The early settlers were mainly farmers, and sweet potatoes and cotton were the main cash crops. Cattle and hogs were raised for home use. Crop farming has declined over the years, and many old cropland fields and woodland areas have been cleared and planted to pasture.

Most livestock are raised in cow-calf operations. The livestock are mostly pastured in summer and fed hay and feed supplements in winter. Pastures are mainly in Coastal bermudagrass, common bermudagrass, and bahiagrass, which also provide hay for beef production. Cool-season legumes are overseeded in many pastures to improve the soil and provide additional forage.

Dairy farming has become increasingly important in the area. There are more than 50 dairy herds in Upshur County. These are located dominantly in the Kelsey-Shady Grove area, where the farms average more than 100 milk cows each (*5*). Many acres of pasture are required for grazing, hay, and silage.

Crop production is mainly nonirrigated truck crops of corn, peas, sweet potatoes, and watermelons. Most farms are small.

Commercial timber production in the area is mostly on locally owned small tracts. Each year pine and hardwood timber is harvested for pulpwood, saw logs, crossties, posts, and poles. This activity is significant to the local economy. Many fields that were once in cropland have been converted to pine plantations to increase future timber yields.

natural resources

Soil is the most important resource in Upshur and Gregg Counties. The production of livestock, forage, crops, and timber, which are sources of livelihood for many people, all depend on the soil.

Oil and gas production is also significant in the survey area (fig. 1). Gregg County is in the center of the East Texas Oil Field, which also extends into southern Upshur County. The numerous oil and gas wells are sources of income for many landowners. Oil and gas exploration, drilling, and servicing provide employment for countless people.

Sand and gravel are mined in the counties. Sand is mined on the stream terraces of the Sabine River and Big Sandy Creek. Gravel is obtained from an iron ore hill in the area. The sand and gravel are used mainly in construction.

Land leasing for mining of lignite coal has become increasingly important in the northwestern part of the area. The coal is burned to generate electricity.

Water, fish, and wildlife are important natural resources. Lake O'the Pines; Lake Cherokee; Lake Gladewater; the Sabine River; and numerous smaller lakes, ponds, and creeks provide abundant water for the area. These water sources are used for agriculture, industry, recreation, and domestic needs. Fish and wildlife provide recreation and income to the landowners of the counties.

climate

Prepared by the National Climatic Center, Asheville, North Carolina.

Gregg and Upshur Counties have long, hot summers because moist tropical air from the Gulf of Mexico persistently covers the area. Winters are cool and fairly short, with only a rare cold wave that moderates in 1 or 2 days. Precipitation is fairly heavy throughout the year, and prolonged droughts are rare. Summer precipitation, mainly afternoon thundershowers, is adequate for all crops.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Gilmer, Texas, in the period 1951 to 1978. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter the average temperature is 46 degrees F, and the average daily minimum temperature is 34 degrees. The lowest temperature on record, which occurred at Gilmer on February 2, 1951, is minus 3 degrees. In summer the average temperature is 81 degrees, and the average daily maximum temperature is 92 degrees. The highest recorded temperature, which occurred at Gilmer on August 17, 1951, is 109 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the averag temperature each day exceeds a base temperature (5C degrees F). The normal monthly accumulation is used : schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 48 inches. Of this, 2 inches, or 50 percent, usually falls in April through September, which includes the growing season for mo crops. In 2 years out of 10, the rainfall in April through September is less than 16 inches. The heaviest 1-day rainfall during the period of record was 7.88 inches at Gilmer on April 23, 1966. Thunderstorms occur on abc 50 days each year, and most occur in summer.

Average seasonal snowfall is 2 inches. The greates snow depth at any one time during the period of recor was 5 inches. Seldom is there a day with an inch of snow on the ground, but the number of such days var greatly from year to year.

The average relative humidity in midafternoon is abc 55 percent. Humidity is higher at night, and the averag at dawn is about 85 percent. The sun shines 70 perce of the time possible in summer and 50 percent in wint The prevailing wind is from the south. Average windspeed is highest, 12 miles per hour, in spring.

22-4

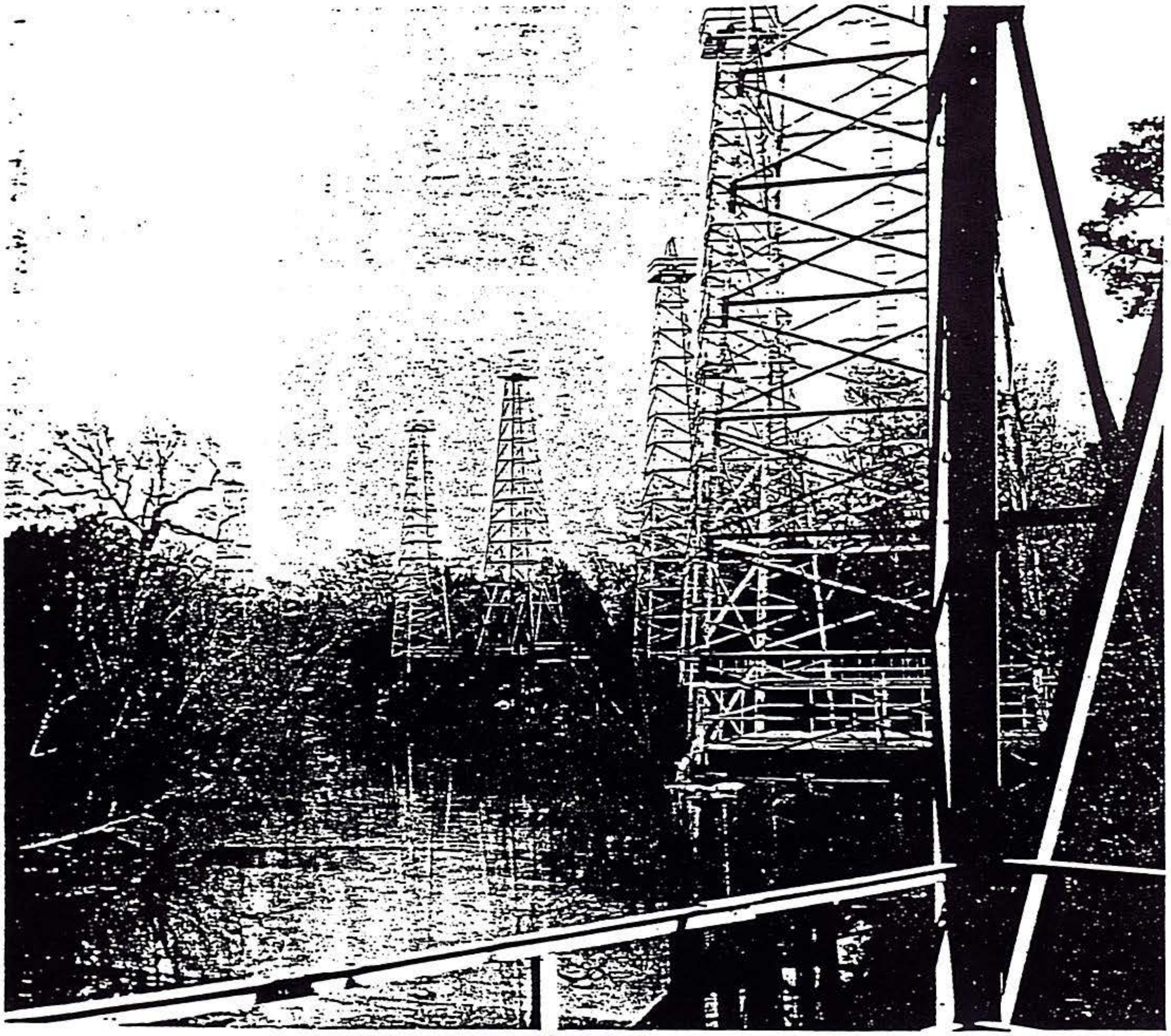


Figure 1.—Oil derricks along the Sabine River in Gregg County.

Severe local storms, including tornadoes, strike occasionally in or near the area. They are short and cause variable and spotty damage. Every few years in summer or autumn, a tropical depression or remnant of a hurricane that has moved inland causes extremely heavy rains for 1 to 3 days.

how this survey was made

Soil scientists made this survey to learn what soils are in the survey area, where they are, and how they can be used. They observed the steepness, length, and shape of slopes; the size of streams and the general pattern of drainage; the kinds of native plants or crops; and the kinds of rock. They dug many holes to study soil profiles. A profile is the sequence of natural layers, or horizons, in a soil. It extends from the surface down into the parent material, which has been changed very little by leaching or by plant roots.

22-5

The soil scientists recorded the characteristics of the profiles they studied and compared those profiles with others in nearby counties and in more distant places. They classified and named the soils according to nationwide uniform procedures. They drew the boundaries of the soils on aerial photographs. These photographs show trees, buildings, fields, roads, and other details that help in drawing boundaries accurately. The soil maps at the back of this publication were prepared from aerial photographs.

The areas shown on a soil map are called map units. Most map units are made up of one kind of soil. Some are made up of two or more kinds. The map units in this survey area are described under "General soil map units" and "Detailed soil map units."

While a soil survey is in progress, samples of some soils are taken for laboratory measurements and for engineering tests. All soils are field tested to determine their characteristics. Interpretations of those characteristics may be modified during the survey. Data are assembled from other sources, such as test results, records, field experience, and state and local specialists. For example, data on crop yields under defined management are assembled from farm records and from field or plot experiments on the same kinds of soil.

But only part of a soil survey is done when the soils have been named, described, interpreted, and delineated on aerial photographs and when the laboratory data and other data have been assembled. The mass of detailed information then needs to be organized so that it can be used by farmers, rangeland and woodland managers, engineers, planners, developers and builders, home buyers, and others.

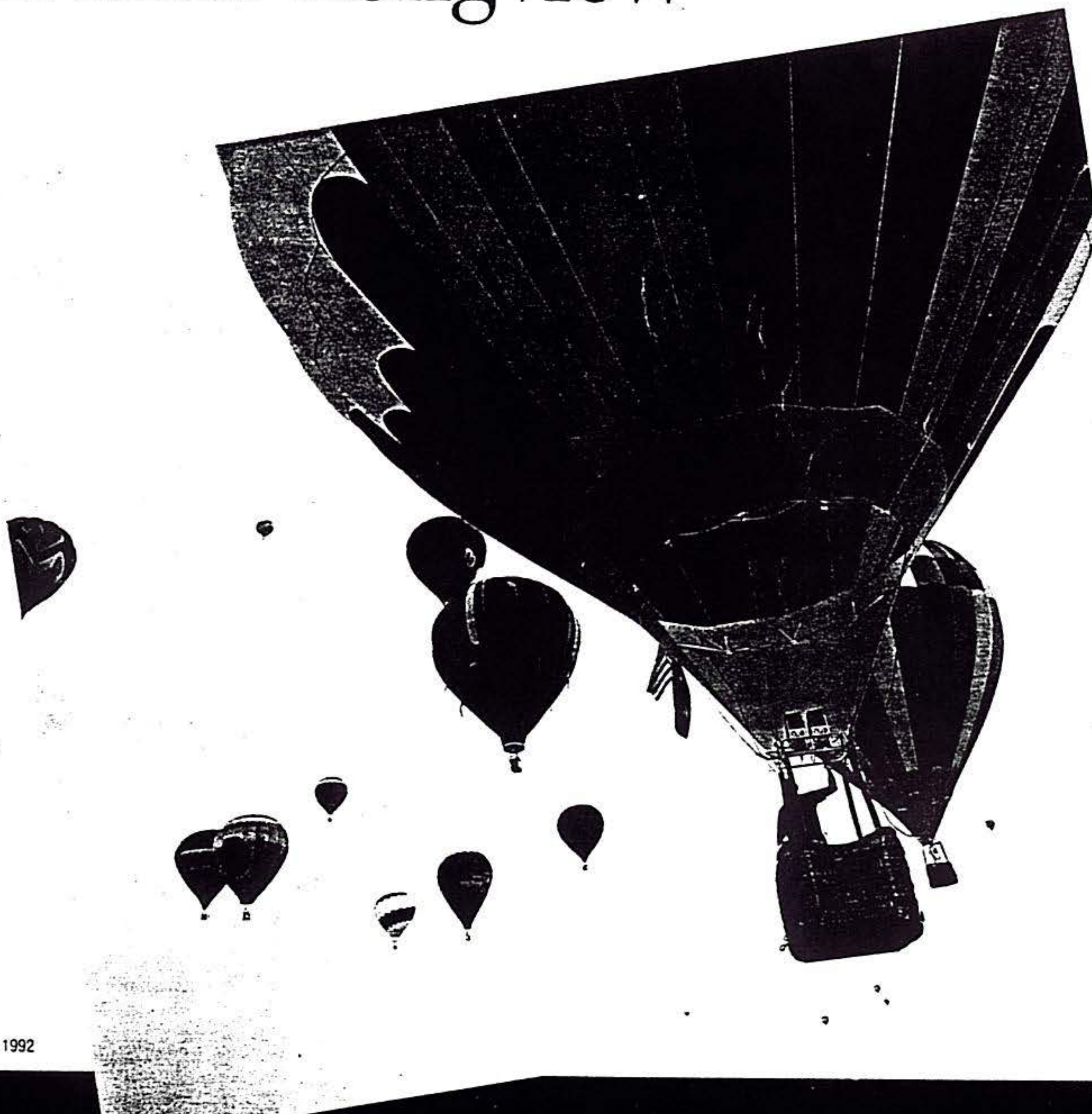
REFERENCE 23

Southwestern Bell Telephone Company, "Greater Longview, December 1992-93, White and Yellow Pages".

Southwestern Bell

December 1992-93 White and Yellow Pages

Greater Longview



ıe Great
ːxas Balloon
ıce exemplifies
ɛ can-do
ıtude of east
ːxas."

| Stoudt
ıirman
ːat Texas Balloon Race

White Pages printed
on 10% recycled paper.

23-1

ırea Code
ɔ03

Featuring...
Emergency Numbers
Customer Guide
Fingertip Facts®

Select Talk®
Yellow Pages Index
Gold Pages
Discount Coupons™

eck Recovery & Verification

ata Inc 500 N 2 St — 753-8354

hemical Cleaning-Industrial

LEANING CONTRACTORS

MINING • HEAVY EQUIPMENT
OILFIELD • EXTERIOR BUILDINGS
PARKING LOTS • TRUCK FLEETS

w Tx — 297-3747

Chemical Cleaning Systems

aning Systems-Pressure, Chemical, Etc.

Chemical Engineers

gineers-Professional

Chemical Feeders

mps

Chemical Well Treating

Well Services

Chemicals

NTERPRISES

INDUSTRIAL & CAR WASH
CLEANING CHEMICALS / DEGREASERS
CHECK WITH US BEFORE YOU BUY

r Tx — 734-7334

FAMILY POOLS 1220 Karnes Rd — 753-5456
rocess Chemicals 414 E Loop 281 — 753-8119
R CHEMICAL & SERVICE INC

NSECTICIDES • HERBICIDES
SWIMMING POOL CHEMICALS
DO IT YOURSELF PRODUCTS

4 Loop 281 NW — 297-0070

tex Industrial Inc 117 Edgewood St — 759-2642
★FOR MORE INFORMATION
See Advertisement This Page

INDUSTRIES INC

NDUSTRIAL SOLVENTS & CHEMICALS

y 149 S Lgv Tx — 643-7362

A DISTRIBUTORS

FULL LINE CHEMICAL DISTRIBUTOR
DEHYDRATOR CLEANING
TRIETHYLENE GLYCOL RECLAMATION
HAZARDOUS WASTE TRANSPORTATION & DISPOSAL

0 Fisher Rd — 759-7151

NDERS CHEMICAL CO INC

Flanders CHEMICAL CO. INC.

ycols, Methanol,
mines, Solvents,
eed Killer, Anti-Freeze
Pool Equipment
lters & Accessories
Pumps

DEHYDRATOR WASH OUT SERVICE
24 HOUR SERVICE

LANDERS CHEMICAL CO INC Hwy 1845 — 758-7942
If No Answer Call — 758-6722

HARCROS CHEMICALS INC

A primary source for industrial chemicals. Large selection and inventory available locally for prompt delivery throughout the Ark-La-Tex area.

HARCROS CHEMICAL GROUP

HARCROS CHEMICALS INC
5011 Jack Wells Blvd Shreveport La
Toll Free-Dial "1" & Then — 800 321-3264

Industro Supply Co RD 2087 — 759-0468
Kirby Restaurant Supply 809 S Eastman Rd — 757-2723
MINGO SALES & SERVICE CO

MANUFACTURERS OF
INDUSTRIAL & CAR WASH
CLEANING CHEMICALS
DETERGENTS - DEGREASERS
ACID - BULK/PACKAGED

1821 Judson Rd — 757-3358
Toll Free — 1 800 638-3823

Southwest Solvents & Chemicals
2060 W Commerce St — 214 742-3762
Van Waters & Rogers 2818 E Marshall Av — 758-0555
Wilson Distributing Co 818 E Methvin — 758-4821

Chemicals-Hauling

See Trucking-Liquid Or Dry Bulk

Chemists-Analytical & Consulting

East Texas Testing Laboratory Inc 707 W Cotton - 758-0402

Child Abuse Information & Treatment Centers

Meadow Pines Hospital 22 Bermuda Ln — 663-4411

Child & Adolescent Guidance Counselors

Caraway Loretta Licensed Professional Counselor - 758-3663
Craig L Moore PhD
See Ad At Psychologists
206 Pine Tree Rd — 759-1145
Heard Gayle CSW-ACP LMFT
1508-D W Fairmont St — 753-1573
JEREB RONALD J 301-A E Methvin St — 757-9600
Langford Eugene P PhD 513 N Fredonia St — 757-4611
LOUGHMILLER GROVER C PHD

CHILD COUNSELING - BEHAVIORAL
• ABUSE • CUSTODY • LEGAL PROBLEMS
LEARNING PROBLEMS & TESTING

1605-C Judson Rd — 753-7496

QUALITY PRODUCTS SINCE 1980

CHEMTEX INDUSTRIAL INC.

MANUFACTURING CLEANING COMPOUNDS FOR:
TRANSPORTATION • OIL FIELD SERVICES
PETROCHEMICAL • MINING • UTILITIES
MARINE • MANUFACTURING • METAL CLNG
CONTRACT BLENDING (YOUR FORMULA OR OURS)
FULL SERVICE "IN-HOUSE" FLEET CLEANING
100% BIODEGRADABLE NON-PETROLEUM
SOLVENTS & DEGREASERS

SPECIALIZING IN

BULK INSTALLATIONS

759-2642
FAX # 903-297-0369
117 EDGEWOOD

Child Care Centers

ABC PRE-SCHOOL

PRESCHOOL
&
DAYCARE

• 18 MONTHS THRU 13 YEARS
• PRESCHOOL CLASSES
• AFTER SCHOOL SUPERVISION
• STATE LICENSED

NEAR PINE TREE RD AND WEST MARSHALL

202 W Niblick — 759-6365

Almost Angels Day Care 1710 S Green St — 236-7134
APPLEWOOD ACADEMY AND DAY CARE CENTER

APPLEWOOD ACADEMY

AGES 6 WKS-9 YRS
NURSERY-PRESCHOOL-KINDERGARTEN

- Computer Training
- Nutritious Lunches/Snacks
- Public School Pick-up & Delivery
- Excellent Curriculum
- Swimming Pool
- Summer Day Camp Program
- Degreed Teachers
- Limited Enrollment

APPLEWOOD ACADEMY AND DAY CARE CENTER
1512 Judson Rd — 753-3737

Asbury House Child Enrichment Center
726 Idylwood Dr — 758-7062
Bottom's Up Day Care Center 741 Ethel St — 236-3399
Camp Fire Inc
Camp Fire Kids Care 1805 Pine Tree Rd — 297-0112
Valley View School 1601 Alpine St — 757-2728
Camp Fire Kids Care 111 Tupelo Dr — 758-2060
Camp Fire Kids' Care
Pine Tree Elementary 815 Birch Dr — 759-8841
Pine Tree Intermediate 1707 Pine Tree Rd — 759-8837
Cherokee Preschool & Daycare II
4984 F M Rd 2011 — 643-9566
CORNER PLAYSCHOOL THE 2400 Gilmer Rd — 297-9192
★FOR MORE INFORMATION
See Advertisement Page 120
Fairmont Children's School 1450 Fairmont — 297-3393
★FOR MORE INFORMATION
See Advertisement Page 120
First Baptist Church Wee Learn Center
209 E South St — 758-0153
★FOR MORE INFORMATION
See Advertisement Page 122
Garrett TLC Learning Center 1602 S Mobberly Av - 757-6080
Gregg County Early Childhood Development Center
507 E Methvin St — 753-6607
Greggton United Methodist New Horizon School
1101 Pine Tree Rd — 759-3831
House Of Tots 434 S Center — 757-5753
HOUSE OF TOTS CREATIVE SCHOOL

Reading Readiness • Drama
After School Care • Transportation
18 mos - 10 yrs. • Summer Programs

434 S Center — 757-5753

JORDAN COUNTRY DAY SCHOOL

FULL DAY KINDERGARTEN
DEVELOPMENTAL CLASSES AGES 2-5 YRS OLD
EXTENDED DAY 6:30 AM - 6:00 PM

1208 Pine Tree Rd — 759-3085

JULIE'S SUNSHINE SCHOOL INC
1300 Hollybrook Dr — 757-4742
★FOR MORE INFORMATION
See Advertisement Page 120
Just For Kids Day Care Hwy 259 Diana — 663-1643

listings of this classification are continued on next page

C

23-2

C

Child Care Centers -(Cont'd)

KANDYLAND KAMPUS DAY CARE
PRESCHOOL CLASSES - CREATIVE PLAY
6 WEEKS & UP - 6:30 AM - 6:00 PM
TUPELO AT JUDSON
115 Tupelo Dr ---------- **758-8247**

Kid Korner Day School 503 E Methvin St ---------- 758-6876
Little Star Pre-School 126 Sidney St ---------- 758-1367
Longview Preschool & Childcare Center
1230 S High St ---------- 758-3861

MOBBERLY BAPTIST CHURCH
CHILD DEVELOPMENT CENTER
"QUALITY CARE"
- PRE-SCHOOL CLASSES
- KINDERGARTEN
- AGES 6 WKS THRU 6 YRS
- SMALL PRIVATE CLASS
- QUALIFIED TEACHERS • HOT LUNCHES
- HOURS - 7AM TO 6PM

MOBBERLY BAPTIST CHURCH

MOBBERLY BAPTIST CHURCH
625 E Loop 281 ---------- 663-3000

Nanny's Babyland 2307 Kingston Dr ---------- 759-0550
★FOR MORE INFORMATION
See Advertisement Page 121

OAK FOREST MONTESSORI SCHOOL
2000 Greenleaf ---------- **297-0634**
★FOR MORE INFORMATION
See Advertisement Page 121

listings of this classification are continued on next page

Some businesses may include such words as "guarantee", "authorized", "certified", "accredited", as part of their firm name. These may not be intended to imply a specific authorization, certification or accreditation in connection with their business. If in doubt, ask the business or company for details.

Look through these pages to find who makes it, sells it, fixes it. You can shop at home, easily and comfortably, by thumbing through the Southwestern Bell Yellow Pages.

Does your business do business by giving estimates or bids? Your ad in the Southwestern Bell Yellow Pages tells people you're big enough and ready to do the job. Tell them you give estimates - you'll get more calls and that will mean more sales.

FAIRMONT
CHILDREN'S SCHOOL

FAIRMONT CHILDREN'S SCHOOL

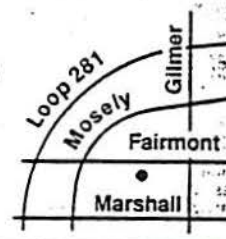
- CLASSES FOR AGES 18 MOS THRU KINDERGARTEN
- AFTER SCHOOL CARE • PICK UP @ PINE TREE, SPRING HILL & WHITE OAK SCHOOLS
- DEGREED TEACHERS • SUMMER PROGRAM - SWIMMING

HOT LUNCHES • DANCING & GYMNASTICS

OWNED & OPERATED BY ROBERT & CONNIE PUTNAM

297-3393

1450 FAIRMONT
(2 BLOCKS EAST OF PINE TREE HIGH SCHOOL)



THE CORNER PLAYSCHOOL

MOTHER'S DAY OUT PROGRAM
Monday & Wednesday 9:30 AM - 3 PM

Program For:
- Infants to Pre-Kindergarten
- Extended Kindergarten • Home Schoolers
"A Christian Based Curriculum"
- Field Trips • Art • Music • Drama • PE

297-9192
2400 Gilmer Rd
At Cornerstone Church

Notes

757-4742

PRE-SCHOOL CLASSES

Day Care And After School

7A.M. - 6P.M. / Ages 6 Weeks Thru 3rd Grade
Full Time or 2 & 3 Days Programs
Owners / Directors: Gail Smith & Julie Wiersig

1300 Hollybrook (At Eastman)

Notes

Child Care Centers -(Cont'd)

LAND HEIGHTS BAPTIST CHILD DEVELOPMENT CENTER

BIRTH - K5 • EXTENDED CARE 7 AM - 6 PM
• SMALL CLASSES • PLANNED CURRICULUM
• HOT LUNCHES • AFTER SCHOOL CARE GRADES 1-6
FAMILY LIFE CENTER
2:30 PM - 6 PM
Located Judson At Eden Dr

Eden Dr ---------- 753-1592

PRESBYTERIAN CHILDRENS CENTER

AGES 6 MO THRU KINDERGARTEN
MORNING CLASSES 8:30 TO 11:45
EXTENDED CARE 7:30 TO 5:30
DEVELOPMENTAL - EDUCATIONAL CURRICULUM
LOCATED DOWNTOWN - WEST OF COURTHOUSE

N Center St ---------- 757-8672

RAINBOW PLACE EARLY CHILDHOOD DEVELOPMENT CENTER 101 Delmar ---------- 759-6532
★FOR MORE INFORMATION
See Advertisement This Page

Happiness Hill Day Care Center
Osborne ---------- 753-0408

SMALL WORLD 508 N 7 ---------- 758-5867
★FOR MORE INFORMATION
See Advertisement This Page

Listings of this classification are continued on next page

Nanny's Babyland

0 TO 6 YEARS

PLANNED CURRICULUM FOR 18 MONTHS THRU PRE-K
HOT NUTRITIOUS LUNCH & SNACKS
Specializing in Tender Loving Care

HOURS:
MON-FRI
6 AM - 6 PM

759-0550
2307 KINGSTON DR.

STATE LICENSED

OAK FOREST Montessori School

Montessori Classes 12 Month A Year
MORNING CLASSES: 18 Months - Kindergarten
EXTENDED DAY CARE: 18 Months - 10 Years
SCHOOL-AGE SUMMER PROGRAM OFFERED

297-0634

2000 Greenleaf
Louise Dyer - Directoress

RAINBOW PLACE

EARLY CHILDHOOD DEVELOPMENT CENTER

OWNER: Bonnie Rudy
DIRECTOR: Judy Thomas

• Ages 6 Wks. Thru 10 Years
• Degreed, Qualified Teachers
• Individual Classes For Each Age
• Planned Curriculum • Daily Bible Study
• Hot Lunches & Snacks • Field Trips
• Dance Classes & Gymnastics

STATE LICENSED

101 Delmar
At Gilmer Rd

759-6532

-After School Pick Up
At Spring Hill, Pine Tree
Doris McQueen

Quality Early Childhood Edu - Care in a Learning Environment

Small World

Pre School - Infants - School Age
Curriculum For All Ages
Qualified Staff - Low Ratio

Longview	Tatum	Henderson
6am - 11:30pm	7am - 6pm	6:30am - 6:30pm
758-5867	**947-2256**	**655-0423**
508 N 7th	Crystal Fm. Rd.	1505 Rayford

23-4